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Deceleration of the Teaching Program*

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Much has been said and written in recent years about acceleration. So much, in fact, that it is difficult to see how one can do more than review the ground that has been covered so thoroughly. For some time before the accelerated program was put into operation in the medical schools, arguments for and against it were discussed at the meetings of this Association. But acceleration was inevitable; it was the principal means of providing enough doctors during the war.

Acceleration has been a problem not only in medical education, but in education generally. It is not a new problem. The controversy has been going on for many years, in times of peace as well as during war. From early in the nineteenth century to early in the twentieth century the ages of students admitted to colleges and universities increased considerably. For example, from 1829 to 1832, approximately two-thirds of the entering students at Harvard were 16½ years old or younger; about a century later, or in 1916, less than 7 per cent were that young. During the century, the average age increased from slightly over 16 years to more than 18 years. The curricula for both higher education and the secondary schools expanded so greatly it became essential that students be more mature at the time they enter college.

This tendency was deplored by President Eliot of Harvard who indicated that the entrance age "has now reached the extravagant limit of 18 years and 10 months." He urged further, "a better training in a shorter time." Likewise, President Lowell, at a later date, said, "With a long period of special training now required in every profession, there is a universal cry that men are beginning their careers in life too old, and that the period of education is too long. There is . . . good reason to suppose that boys could be prepared for college younger than they are, and that it would be an advantage for them to come younger."

Ever since Eliot's and Lowell's administrations, the discussion of acceleration has been recurrent. Numerous plans have been submitted for reducing the amount of time devoted to both secondary and higher education. We seem to go from one extreme to another. During the depression, when millions were

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unemployed, arguments were advanced for lengthening the training for practically everyone in order that we would not aggravate a situation that was already bad. During the war, we have gone to the other extreme; there was an urgent need for technically trained men at the earliest age possible. Now, it is argued that a program set up for war should be continued into the postwar period. The chances are that we shall go on during peace and war following an expedient course. Nevertheless, we should know what we are doing and why we are doing it.

In all the discussion of acceleration during the war, there is one inescapable fact. Education was speeded up for one purpose only: to make men and women available for war work at an earlier age.

In education generally, we adopted various schemes of acceleration. Those most commonly used are: (1) early entrance to college; (2) credit by examination; (3) heavier academic loads, (4) lengthening the school year and (5) curricular modifications or streamlining.

In medical education, more specifically, it is important to remember that over a period of years the length of the program has gradually increased. As parts of the total program, premedical, medical and graduate work must be considered all together. It is specious to try to isolate one segment and deal with it separately. Regardless of the level with which we are concerned, medical education is designed to produce well qualified doctors.

During the war premedical education was accelerated by lengthening the school year, by reducing the number of courses so that in the Army program all of the work could be completed during sixty weeks and in the Navy program during eighty weeks, and by increasing the load the student carries while pursuing the course.

Last February, President MacEwen of this Association, speaking before the Fortieth Annual Congress on Medical Education and Licensure, reviewed the history of acceleration in medical schools during the war. That history is so well known that we need now only to remind ourselves of the extent to which acceleration was accepted.

The medical schools responded readily to the request of the Executive Council of this Association made in May, 1941, urging that every effort be made to train additional doctors in order that the shortage might not become too great. By the spring of 1942, sixty-two schools planned to go on a completely accelerated program, six on partial, one was seeking permission to do so and only four did not plan to accelerate. For the most part, acceleration in the medical schools took the form of lengthening the school year by providing instruction in every month of the year so that the student could complete his medical work within a total of thirty-six months.

In both the Army and Navy non-medical college programs, the curricula were changed considerably in comparison with those normally provided by colleges and universities. It was essential for the armed services to have a common

group of subjects for all colleges taking part in the program so that students might receive the same or similar training regardless of the college they attended. In medical education, however, the armed services respected the wishes of the medical schools and no attempt was made to modify the curriculum. Most medical schools offered the same pattern of work previously set up. The major change they made was to admit a new class every nine months instead of every twelve months as heretofore.

Unlike industry in its concern with improvement of procedures, the medical schools gave little attention to possible changes in the instructional program in order to improve it. Dr. Diehl pointed this out very clearly when he said, "Few changes in the medical curriculum or in instructional methods have been made in connection with the accelerated program. In this, medical schools have followed the line of least resistance—a line which is likely to be followed also in making postwar readjustments to a peacetime basis. On the other hand, periods of stress frequently offer opportunities to make changes or adjustments which are difficult in normal times."

Thus, medical education has made its major adaptation to the war through acceleration by changing the calendars rather than by improving the course of study or methods of instruction.

In making an appraisal of the accelerated program we must depend primarily on a balancing of the arguments. Few facts are available. Not until January, 1945, will a group of students, all of whom have followed the entire wartime premedical course, enter medical schools. We now have no products of medical schools operating under the accelerated program whom we can observe and study in an effort to determine whether either their preprofessional or their professional education is adequate. In fact, students who have completed both premedical and medical work under the accelerated program will not be available for observation until January 1, 1948. By that time we hope to be in the postwar world so that we can look at the results more objectively and thereby profit greatly from the experience.

Those who argue for acceleration, in general, have referred to studies which indicate that the greatest intellectual vigor and productivity come rather early in adult life; that the most notable contributions to science, literature and the arts have been made by men and women in their 20's rather than in their 50's or 60's. They point to studies such as that made at the University of California which showed, when comparing students entering the University under 16½ years of age with those entering at 17 or over, that four times as many of the accelerates made Phi Beta Kappa. Studies of people listed in "Who's Who" and in the "American Men of Science" reveal that these men and women graduated from college earlier by about a year than the average. Agassiz is sometimes used as an example, for he was granted his M.D. at the age of 22 and published his first important work that same year. Such evidence frequently serves as a basis for the conclusion that men of eminence graduated from col-

lege earlier and make many of their significant contributions at a relatively young age.

Such evidence, it seems to me, does not warrant the conclusion that all students in college, or more specifically that all students in medical schools, should follow an accelerated program during time of peace. The eminent individuals of whom the studies are made are rigidly selected and by no means represent a cross section of our college or medical school population. If we argue from the selected group to a common procedure for all students, we make some untenable assumptions.

President MacEwen, in the same address to which I have already referred, summarized the chief criticisms against the accelerated program as follows:

- "(1) That medical standards were being lowered.
- (2) That the war would be over before any appreciable number of doctors would be made available.
- (3) That the health of the medical students was endangered.
- (4) That the student would have no time for contemplation and digestion of new material."

In referring to medical standards he pointed out that "actually the curriculum has been lengthened in most colleges. Under the prewar schedule, the student completed his four academic courses in 128 weeks of instruction. Under the present program, 144 weeks of instruction are required to complete the medical course. This amounts to a total of sixteen weeks of additional instruction—a full semester more than under the prewar program." In summary, Dr. MacEwen concludes: "The accelerated program is meeting the condition for which it was adopted. It is definitely adding to the production of doctors. The financial worries of more than eighty per cent of the students have been solved. Their health should not be endangered more than under prewar conditions. In fact, there are reasons why it might be improved. The curriculum has not been shortened; it has been lengthened in many schools. Therefore, in agreement with the statement of Dr. Johnson, the conclusion must be drawn that the accelerated program '*per se* need not reduce the standards of medical education'; that if certain other conditions can be met, a modified accelerated program deserves serious consideration in the permanent postwar plans."

Even with so favorable a report, two aspects of the problem need to be considered before the question can be answered as to whether medical schools should decelerate the teaching program. The first relates to the shortage of doctors. It is the same problem that we faced during the war and in answer to which the accelerated program was devised. It is wholly possible that the shortage of doctors will persist. In that case we shall undoubtedly continue as an emergency measure some sort of an accelerated program, in order to meet the demand. This aspect of the question must not be confused with desirability from the standpoint

of adequate medical training; it must continuously be thought of only as a means of meeting an emergency.

If an acute shortage of doctors continues, as seems likely, there are three ways by which the problem can be met. Under such circumstances, the reconversion of medical education to a peace time basis may require:

(1) That some medical schools remain on an accelerated program for a period following the war.

(2) That some medical schools, which have sufficient resources to do so, continue the accelerated program for those students who desire it, and at the same time decelerate their teaching program for another group of students.

(3) That some medical schools decelerate their program for all students at the time when the next class enters.

These provisions are made on the assumption that acceleration is an emergency measure.

The other aspect of the problem is whether an accelerated program is so desirable for the training of doctors that it should be continued regardless of the existence of an emergency. By raising such a question, we give acceleration a place of prominence in medical education which it does not deserve. In my judgment, acceleration or deceleration is a minor problem and wholly incidental to others that are far more important. It is a problem we are discussing today because of the war emergency; otherwise it would not now have been raised in medical education.

Far more important than deceleration of the teaching program is an analysis of degree of competence we want developed in the medical profession and the means by which it can be developed. In other words, the basic questions are these: What qualifications do we want our doctors to have? What knowledge? What skills? What fields in medicine is it essential that they study? What facility in working with human beings? What understanding of the social scheme in which they work? And what understanding of the broad aspects of the profession as such is it essential that they have? If we approach the problem starting with these questions, we are confronted at once with a thorough analysis of the entire premedical and medical training with the view of determining what can be eliminated from the course usually offered and what needs to be added. This would mean an evaluation of the whole program in relation to the major purpose of developing qualified doctors.

Doctors Diehl, Rappleye and others have pointed to the importance of examining the program of the medical schools in order to determine whether it is accomplishing all that needs to be done.

Dr. Diehl, for example, indicates that "in most medical schools the curriculum has become overcrowded and rigid. Yet new developments and even some new field, such as physical medicine and social medicine, must be included in the

instructional program if our graduates are to be prepared to deal with the medical problems of the future. In one of the large clinics of this country ten per cent of all patients are referred to the division of physical medicine, a field in which few medical schools provide any instruction worthy of the name.

"If the medical curriculum is to be kept in balance with developments in medical science and medical practice, reappraisal of both the curriculum and instructional methods must be made from time to time. Possibly the time given to some subjects should be curtailed and that given to others extended. The postwar period offers a rare opportunity to make such reappraisals and readjustments."

Similarly, Dr. Rappleye points out that the job ahead of "Reorganizing our program of professional education will also afford an opportunity to give proper importance to subjects recently brought into prominence. It is apparent that more emphasis than heretofore should be placed upon parasitology, the medical and health problems of the tropics, psychosomatic medicine (which accounts to date for one third of our casualties), chemotherapy, the special diseases of adult and old age, biophysics, genetics, industrial medicine, public health, legal medicine, the care and treatment of trauma, especially burns, injuries and shock, nutrition, the correction of physical defects, aviation physiology, and the broad range of environmental factors in health as well as disease. It will not be possible nor desirable merely to add these topics to the old curriculum. The whole structure of medical instruction will have to be examined in the light of present day requirements. In many instances existing departments and programs will have to be reorganized and vitalized."

These medical educators have defined clearly and concisely the major problem now facing medical education. It is not acceleration or deceleration but a reconsideration and rigorous study of the entire program. In the light of developments that have come so rapidly in the field of medicine, the program of courses needs to be revamped thoroughly.

Likewise, there is a need at this time to review the internship, the provisions made for it, the conditions under which the intern serves and the kinds of experiences he accumulates as an intern. During the war, the internship was shortened in line with the accelerated program. Again, acceleration as such is of minor importance. The major issue is that of determining what the internship should accomplish for the young doctor and then providing the essential experiences.

Beyond the medical course and the internship, there is another type of education which has come through experiences that many college and medical school students have had during the summer or vacation months. I am aware of the argument that it does no one any good to serve in a menial way in order to accumulate sufficient funds for the next year in college. Again, evidence is lacking. In my own judgment, based on experience as a college and medical school student, and later from the vantage point of seeing many young men and women

working throughout the summers in Yosemite Park, I thoroughly believe that such experiences have added to their maturity, to their social and human understanding, to their resourcefulness and to their acceptance of responsibility. On the basis of my personal experience and my observation of others, I would not readily give up the summer months in order to continue an accelerated program. Before doing so, we certainly need a thoroughgoing appraisal of the value of such additional education that comes from working through the summer, from travel, from pursuing one's hobby. We need an appraisal from the standpoint of qualities these activities develop in the young doctor.

Aside from the broadening effect of such experiences, we were also concerned before the war with the breadth of the formal education of the doctor and the specialist. Dr. Zapffe, secretary of this Association, has made a number of studies in which he compared the medical school records of several groups. He has repeatedly emphasized that "the ranking group of students in medical school are the bachelors of arts; then come the three-year college men; then the two-year men; and fourth and last, the bachelors of science. This is not an exceptional occurrence. It has happened that way for the past ten years during which this study has been made." Thus, his conclusions have consistently favored the student with the broader general education.

To my knowledge no one has argued for an accelerated program on the basis that it provides a broader education than is normally acquired. I would be most reluctant to give up the advantages, particularly when the evidence favors it, of broader education that might be provided through courses and other types of experiences for the sake of preserving an aspect of medical education that was put into practice as a war emergency. Before, then, we can determine whether an accelerated program should be continued during the postwar period, we must answer the question of the minimum amount of general education that a student should have in order to become a well qualified doctor.

In a similar manner, the methods of instruction need to be examined very critically in order to ascertain whether students can, through a revision of instructional methods, learn much more than they have in the past. Certainly, when we consider the total field of medical education today it is essential that every hour of instruction be used as effectively as possible. Again, this matter, in my judgment, is more important than the problem of acceleration.

During the war, too, considerable attention has been given by representatives of this Association, by the Army and by the Navy, to the selection of students for medical schools. This experience needs to be reviewed in order to see whether we can improve the methods of selection in operation before the war. I recognize that medical students have been more carefully selected than students for any other professional school. Nevertheless, if we can improve our selection procedure still further, the product of the medical schools is bound to be better.

These then are the important issues:

(1) What degree of competence do we want in the young doctor?

(2) What courses should be included in the curriculum? Which courses now offered can be dropped and which new courses must be added? How does each course offered need to be revised in order to bring it up to date with recent developments?

(3) How broad or how specialized should premedical education be?

(4) What, precisely, do we wish to accomplish through the internship? And how can we accomplish it?

(5) What qualities can be developed outside the schools during the summers which no premedical or medical program is designed to develop?

(6) What are the most effective methods of instruction that can be followed in each course?

(7) What have we learned during the war about selecting students that we can apply to improve the selection methods now in vogue?

The responsibility for answering these questions rests with the medical educator. There is no place in medical education for complacency. The questions must be answered in such a way that will provide society with the highest quality of doctors. In this we can not compromise. When medical education is considered in these terms, the problem of decelerating the teaching program fades into minor significance. It will largely take care of itself as better answers are found for the major issues.

Deceleration of the Teaching Program*

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This paper will not concern itself with schedules for deceleration of the wartime curriculum. It will assume that these may satisfactorily be worked out by the individual school according to its own needs. Some may think that the paper is wrongly titled, since I propose to deal principally with some of the advantages and disadvantages, to the student, to the school and to medical education, of making it possible for the student to complete the work for the degree of Doctor of Medicine in less than the traditional four year period.

At the 1941 meeting of this Association, there were presented two excellent papers¹ on a curriculum for medical schools which would allow the students to obtain the degree of Doctor of Medicine in three calendar years. The Executive Council recommended that all schools which could do so without lowering standards begin the program. The manner of acceleration was left to the individual school.

In July of this year, member colleges voted by mail to return to a program of admitting one class each year after October, 1945.² The Army and the Navy have indicated their approval of the action taken. Thus we approach the end of the wartime acceleration of medical education. We may now further evaluate our experience with the program and decide whether there are features worth retaining for a peacetime schedule.

The wartime accelerated program has been praised by some and condemned by others. Johnson, Swett and Green,³ acting as a committee from this Association, studied the effects of the program on students, schools, medical education and research, and reported their findings at the Louisville meeting in 1942. At the Cleveland meeting in 1943, Johnson,⁴ for the committee, presented a similar report. These studies and others on the wartime program, as well as the experience of the many schools in this country which before World War II provided for some degree of acceleration, will be of great value in planning the curriculum for the future.

In 1928, Davison⁵ suggested a program which offered the student an opportunity to complete the work for the M. D. degree five years after graduation from high school. This program, with modifications, has been followed by Duke University since 1930. Northwestern University has followed an accelerated program for sixteen years. The University of Chicago, ever since it was founded,¹ has made use of the summer months to shorten the medical curriculum. The University of Tennessee has for twelve years⁶ offered a program that allows the student to obtain the M. D. degree in three calendar years. Wake

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Forest College adopted such a program when its new Bowman Gray School of Medicine was planned in 1939. According to Johnson,² thirty-five schools, prior to World War II, offered summer clinical instruction; eighteen offered summer preclinical instruction; twelve allowed the student to graduate in less than the traditional four year period; and in ten schools some summer school attendance was compulsory.

Advocates of complete deceleration after the war point consistently to the following five bad effects of the three year program:

1. It places too great a financial burden on the student.
2. It is detrimental to student health.
3. It lowers educational standards.
4. It causes a decline in student accomplishment.
5. It hinders research.

In an attempt to learn the opinion of faculty members and students on the above points, questionnaires were submitted to the deans of all the medical schools in the United States, to the students at the University of North Carolina Medical School and Duke University Medical School, and to our own students. I am indebted to Dr. W. Reece Berryhill and Dr. W. C. Davison for assistance with the questionnaires for students at North Carolina and Duke medical schools, respectively.

The following questionnaire was sent to the seventy-seven medical schools in the United States that are members of this Association:

1. Has the accelerated program been a financial burden to civilian students?
2. Under the accelerated program has there been a noticeable increase in illness among the students?
3. Has the student reaction been favorable or unfavorable to acceleration?
4. Has faculty reaction been favorable or unfavorable to acceleration?
5. With a peacetime staff available would educational standards suffer under an accelerated program?
6. With a peacetime staff available would research suffer under an accelerated program?
7. Will your school return to your prewar schedule at the end of the accelerated program? Completely.....? Partially.....?

Replies were received from sixty-seven schools and are analyzed in Table 1.

From this table you may observe that, according to the deans of sixty-seven schools, almost one-half (48 per cent) of the civilian students found the accelerated program to be a financial burden. It is gratifying that only 10 per cent of the schools reported a noticeable increase in illness among students under the accelerated program.

A majority of the schools (63 per cent and 70 per cent) feel that, even with a peacetime staff available, educational standards and research would suffer under an accelerated program. It is entirely possible that answers to these questions reflect, in part, present conditions under which faculty members are working. Certainly, there is no evidence that educational standards and research

before the war were on a lower plane in schools that allowed acceleration than in those that followed the slower schedule. Another indication that the war is having a cumulative bad effect on morale is found when we compare the report of Johnson, Swett and Green, made in 1942,³ with the answers to our questionnaire. Replies to a similar questionnaire sent out by them indicated that "nonmilitary research" had been reduced "minimally" in twelve schools, "moderately" in fourteen schools, "considerably" in twenty-four schools; and had been almost entirely stopped in six schools. One may see a further reflection of lowered morale in the answers to our questions Nos. three and four. Johnson,

TABLE 1.

1. Financial Burden to Students:		
Yes	32	48%
No	28	42%
No Definite Opinion	7	10%
2. Noticeable Increase in Illness Among Students:		
Yes	7	10%
No	60	90%
3. Student Reaction:		
Favorable	25	37%
Unfavorable	30	45%
No Definite Opinion	12	18%
4. Faculty Reaction:		
Favorable	9	13%
Unfavorable	48	72%
No Definite Opinion	10	15%
5. Educational Standards Suffer:		
Yes	42	63%
No	20	30%
No Definite Opinion	5	7%
6. Research Program Suffer:		
Yes	47	70%
No	14	21%
No Definite Opinion	6	9%
7. Will Return to Pre-War Schedule:		
Completely	36	54%
Partially	6	9%
Undecided at Time of Answering Questionnaire	25	37%

Swett and Green, in 1942,³ found that forty-three of fifty-four schools reported favorable student reaction and forty-five of fifty-seven schools, or 80 per cent, reported favorable faculty reaction. We found, two years later, that only 37 per cent of the schools reported favorable student reaction and only 13 per cent reported favorable faculty reaction.

We next decided to find out what the students themselves think of the accelerated program. We regret that limits of time prevented us from submitting the questionnaire to students in schools outside North Carolina. In this connection, I want to call attention to the very complete questionnaire for students and interns that will appear in the November issue of *Interne*.⁷ This questionnaire was prepared by members of the Association of Interns and Medical Students, in collaboration with several medical school deans and others interested in medical education. Deans should urge their students and interns to send in answers to that questionnaire in order that the survey may evaluate fairly the opinions of men and women now on the receiving end of medical education.

The following questions were answered by 485 students at North Carolina, Duke and Bowman Gray medical schools:

1. Has the accelerated schedule *within itself* in your opinion caused you excess fatigue or impaired your health?
2. As a civilian student would your financial problems be substantially different under a speed-up schedule from those under the prewar program allowing summer vacations?
3. Do you consider the accelerated program to be a disadvantage to the student?
4. Do you consider the accelerated program to be an advantage to the student?
5. If there are advantages and disadvantages in the accelerated program to the student, which in your opinion outweigh the other?
6. If you were given the privilege of an option, would you elect to go to school under an accelerated program that allows you to complete your medical education in three calendar years, or would you select a slower schedule that would require four calendar years?

In Tables 2, 3 and 4 the answers from the three student bodies are tabulated separately, and Table 5 gives a composite analysis.

TABLE 2.—UNIVERSITY OF NORTH CAROLINA SCHOOL OF MEDICINE.

Question	1st Year	2nd Year	Total
1. Fatigued	48% (20/46)	58% (18/31)	49% (38/77)
2. Finances affected	58% (26/46)	61% (19/31)	59% (45/76)
3. Disadvantage	91% (42/46)	94% (30/32)	92% (72/78)
4. Advantage	21% (9/42)	42% (13/31)	30% (22/73)
5. Advantages outweigh disadvantages	10% (4/40)	16% (4/25)	12% (8/65)
6. Acceleration preferred	11% (5/45)	10% (3/31)	11% (8/76)

TABLE 3.—DUKE UNIVERSITY SCHOOL OF MEDICINE.

Question	1st Year	2nd Year	3rd Year	4th Year	Total
1. Fatigued	25% (15/61)	33% (21/63)	50% (31/62)	48% (31/65)	39% (98/251)
2. Finances affected	56% (34/61)	52% (33/63)	38% (24/63)	50% (32/64)	49% (123/251)
3. Disadvantage	85% (52/61)	79% (50/63)	78% (49/63)	92% (59/65)	84% (210/252)
4. Advantage	40% (23/58)	37% (23/63)	50% (31/62)	32% (21/65)	40% (98/248)
5. Advantages outweigh disadvantages	7% (3/45)	15% (8/53)	23% (14/60)	18% (10/56)	16% (35/214)
6. Acceleration preferred	13% (8/61)	21% (13/63)	24% (15/63)	17% (11/65)	19% (47/252)

TABLE 4.—BOWMAN GRAY SCHOOL OF MEDICINE.

Question	1st Year	2nd Year	3rd Year	4th Year	Total
1. Fatigued	5% (2/38)	26% (11/42)	29% (12/41)	25% (9/36)	22% (34/157)
2. Finances affected	21% (8/38)	43% (18/42)	49% (20/41)	53% (19/36)	41% (65/157)
3. Disadvantage	46% (17/37)	62% (26/42)	65% (26/40)	61% (22/36)	59% (91/155)
4. Advantage	50% (28/35)	73% (30/41)	58% (22/38)	66% (21/32)	69% (101/146)
5. Advantages outweigh disadvantages	67% (20/30)	51% (18/35)	54% (19/35)	33% (12/36)	51% (69/136)
6. Acceleration preferred	66% (25/38)	45% (19/42)	46% (19/41)	30% (10/33)	47% (73/154)

TABLE 5.—COMPOSITE ANALYSIS.

Question	1st Year	2nd Year	3rd Year	4th Year	Total
1. Fatigued	26% (37/145)	37% (50/136)	42% (43/103)	40% (40/101)	35% (170/386)
2. Finances affected	47% (68/144)	51% (70/136)	42% (44/104)	51% (61/100)	48% (233/484)
3. Disadvantage	77% (111/144)	77% (106/137)	73% (76/103)	80% (81/101)	77% (373/486)
4. Advantage	44% (60/135)	49% (66/135)	53% (53/100)	43% (42/97)	47% (221/467)
5. Advantages outweigh disadvantages	23% (27/115)	27% (30/113)	35% (33/95)	24% (22/92)	27% (112/415)
6. Acceleration preferred	26% (38/144)	26% (35/136)	33% (34/104)	21% (21/98)	27% (128/482)

We may observe, first, that, whereas only 10 per cent of the deans reported a noticeable increase in illness among students, 35 per cent of the students in the three student bodies questioned feel that they have been excessively fatigued or that their health has been impaired. This probably indicates that, although there has been little increase in actual illness, the students feel tired out.

It is of particular interest to note that exactly the same percentage of deans and students—namely, 48 per cent—feel that an accelerated program would be a burden to the civilian student financially.

The percentage of students who feel that the advantages of acceleration outweigh the disadvantages and who would choose an accelerated curriculum if given an option seems to me to be the most important factor in the decision of any school to offer such a program—that is, assuming that the faculty and the facilities of the school are adequate. The percentage of students at North Carolina, Duke and Bowman Gray Medical Schools who feel that the advantages of acceleration outweigh the disadvantages are 12 per cent, 16 per cent and 51 per cent, respectively. The percentage who would choose an accelerated program is, in the same order, 11 per cent, 19 per cent, and 47 per cent. The vote of the Duke student body on this question did not run according to actual experience. According to Dean W. C. Davison,⁸ 56 per cent of the Duke students for the ten year period prior to Pearl Harbor elected voluntarily to accelerate, whereas only 19 per cent say now that they would do so. Again, it is possible that war time fatigue may have influenced the answers.

Another significant fact is that the percentage of students in the three schools who indicated that they would accelerate if given the option is in inverse proportion to the number who stated that they had been fatigued and would be financially burdened by the accelerated program. This is evidence that the students would, if given the option, accelerate according to their ability to do so physically, financially and, no doubt, intellectually.

We have adopted a plan at the Bowman Gray School of Medicine for a peacetime schedule which will allow the student to accelerate according to his ability to do so. At the end of the first year, the traditional summer vacation will be given. From the beginning of the sophomore year the student may continue a four quarter per year schedule until the work for the M. D. degree is completed. This privilege will be allowed only the superior student who is physically and financially able to follow the continuous program without undue burden. The student who is physically and financially able to accelerate but who does poor work may not be permitted to receive his degree in less than the traditional four year period, but may be required to use one or both of the summer vacations to do extra work in some subject in which he is weak. The schedule thus provides that the student may complete the medical course in from thirty-nine to forty-five months. It provides an opportunity for the superior student to take advantage of his ability and graduate in a shorter time. It provides an opportunity for the inferior student to do extra work without taking longer than the traditional four year period to obtain the degree of Doctor of Medicine.

A teaching hospital worthy of the name places teaching as the central objective in all of its activities. It cannot be a teaching hospital nine months in the year and a non-teaching hospital three months in the year if it is to be most effective. The clinical clerk, like the student nurse, is an essential person in the scheme of operation in a teaching hospital. His work is dovetailed with that of the intern and resident. Obviously, he is not on the ward to do the work of the intern or to be "used" by him. The clinical clerk, intern, resident and staff member make up a unified team. The loss of any member of the "team" makes it necessary to change the program. It then follows that the presence of the clinical clerk on the ward throughout the entire year enables the teaching hospital to conduct an uninterrupted program of medical care and education.

CONCLUSIONS

1. It is my belief that plans for deceleration of the wartime program should still allow the student an opportunity to complete his medical course in less than the traditional four year period.

2. Making use of summer vacations for acceleration not only allows the superior student to take advantage of his ability, it also allows the inferior student an opportunity to prepare himself better without extending his course of study beyond forty-five months.

3. Clinical clerks on the ward throughout the year enable the teaching hospital to conduct a more effective, uninterrupted educational program.

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Partial Acceleration of the Medical Program*

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Measured in terms of a lifetime, the period required to prepare for the practice of medicine is a long one. During peacetime, not less than three academic years in college are required as premedical training. Then, after four years of medical school and one year of internship, many graduates spend from one to seven, or more, years in additional training to qualify in a specialty. It would, thus, seem desirable to offer students an opportunity to shorten the period of instruction as much as possible.

Since 1925, Northwestern University Medical School has operated on the quarter system. A partially accelerated program was introduced in 1928; the first graduating class affected was the one completing instruction in 1930. No alteration was made in the method or time of admitting the freshman class; one class entered in the fall of each year. No instruction was offered in the summer quarter between the freshman and sophomore years. Upon completion of the last quarter of the sophomore year, the student was given an option of attending summer school for the first quarter of junior instruction. This option was likewise extended at the completion of the third year; thus, a student was allowed to shorten the period of enrollment by either three or six months, if he so desired. A vacation of approximately three weeks was provided in September between the summer and fall quarters. The number of students enrolled in the accelerated program during this period is shown in the following table:

NUMBER OF STUDENTS WHO GRADUATED THREE AND SIX MONTHS EARLY UNDER THE PARTIALLY ACCELERATED PROGRAM.

The partially accelerated program started in the summer of 1928, the first group affected graduating in 1930.

Year	No. of Seniors	Finished 6 Mos. Early	Finished 3 Mos. Early	Percentage Accelerated
1930	136	20	44	48.5
1931	127	12	26	29.9
1932	148	28	22	33.7
1933	142	31	22	37.3
1934	166	25	25	32.0
1935	166	29	25	35.2
1936	147	18	17	23.8
1937	155	22	24	29.6
1938	145	15	32	32.4
1939	144	16	23	27.0
1940	151	27	23	33.0
1941	151	30	35	43.0
1942	137	12	24	26.2
Average	1,895	285	342	431.6
	146	22	28	33.2%

Total acceleration began Summer Quarter, 1942.

* Read at the Fifty-fifth Annual Meeting of the Association of American Medical Colleges, held in Detroit, October 23-25, 1944.

While it will be seen that there is considerable variation from year to year, approximately one-third of all students availed themselves of this opportunity.

In 1943, Jung and Cisler, of the Department of Physiology at Northwestern University Medical School, conducted a study to determine whether the records of students would reveal any influence on health and scholarship, favorable or unfavorable, of continuous registration throughout the summer. Seven successive classes were studied, beginning with the one entering in 1931 and ending with the class graduating in 1941. As an index of student health, the number of visits made by each student to the health officer was used as a criterion. A similar study was made on the scholarship record of each student in these various groups. It was found that the number of visits made by each student to the student health officer showed no striking relationship to the summer session attendance; the scholarship study yielded the same result. No appreciable influence on either health or scholarship was traceable to attending medical school during summer quarters. They concluded, however, that there were indications that so long as attendance during the summer was voluntary, the group of students attending was composed of individuals who had been healthier and more proficient the preceding year. It seemed likely that if attendance were compulsory, detrimental effects on health and scholarship might become manifest. The wealth of material offered by the present program in all medical schools will yield much valuable information on this point.

The disadvantages of a partially accelerated program are immediately obvious. It is difficult to inaugurate with a small clinical faculty and limited clinical facilities because not only must additional instruction be offered, but likewise the schedule must be so arranged that the various courses of instruction are given simultaneously. For example, a curriculum for the autumn quarter of the junior year must offer not only the regular first quarter instruction, but also the second quarter instruction for those students who have chosen to accelerate. During the senior year, the program must be adjusted further to accommodate three different groups of students: (a) those who are on regular schedule; (b) those who have accelerated one quarter; and (c) those who have attended continuously since their sophomore year and are two quarters advanced. An increased faculty personnel and enlarged classroom and laboratory facilities must, therefore, be available. However, since much of the work in the last two years is done in hospitals and dispensaries, classroom and laboratory facilities are not usually a major item.

The geographic location of the medical school must also be considered before adoption of such a program since conceivably southern schools would have difficulty in conducting classes during certain months of the summer.

Certain state laws require that a fixed period of time shall have elapsed between the beginning and the end of medical school registration. In the case of one (Illinois) this period exceeds the time required to complete instruction, if the student elects two summer quarters of work. To circumvent this difficulty, the registrant is assigned to an additional three months of hospital work

before beginning his internship. The degree of Bachelor of Medicine is conferred after three months have elapsed. No tuition is charged for this extra quarter. Thus, a student attending two summer sessions actually shortens the time elapsing between matriculation and graduation by only three months, but he gains an additional three months' training as a clinical clerk. It is again evident that adequate hospital facilities must be available to conduct such a program. It will likewise be apparent that beginning of an internship will not always coincide with the date of completion of registration in the medical school. Over a period of twelve years, however, we found this but seldom a significant problem.

During the period of training after completion of medical school studies, and while he is taking additional training, the young physician seldom has the inclination or the opportunity to take a continuous holiday of three or four months and it is an unchallenged fact that few men in the practice of medicine are able or willing to divorce themselves from the profession for a similar length of time. For these reasons it is desirable that where a student is financially able to do so, he be given an opportunity to shorten his period of undergraduate instruction as much as possible. The program described offers this opportunity. On the other hand, those students who are unable, because of the condition of their health or finances, to accelerate their courses are not penalized. A student who has been forced to drop out of school for reasons of poor health, scholarship, or finances, may re-enter at the beginning of any quarter without jeopardy to his course or repetition of any work, when such a program is in effect.

Another advantage in the continuous plan of instruction is the utilization of clinical material during the summer months. The affiliated hospitals and clinics of most medical schools follow the same schedule the year around; their material is available for teaching during the summer as well as during the remainder of the year, provided, of course, there is an adequate clinical faculty.

We have found this plan of instruction advantageous to another large group of students, namely, those serving as Research and Teaching Fellows. When instruction is continuous, it is possible for a student to discontinue part or all of his program to serve as a laboratory instructor or to pursue a research problem without fear of undue loss of time in continuing his studies toward a degree. Encouragement of this group, usually comprised of a superior strata of the student body, is beneficial to both the student and the school.

Logically the question follows: if the partially accelerated program is desirable, why not a totally accelerated one, as now in effect? The answer is, if all the conditions above enumerated are met, such a program is justifiable. If classrooms, laboratory space and equipment are adequate, and if the faculty is large enough to conduct such a program without impairing their efficiency as teachers and investigators, it would be advantageous to a student to have such a choice.

It should be pointed out again, however, that in order to qualify for all state board examinations, the candidate can hope to shorten the time elapsing between initial registration and graduation only one quarter's time.

From past experience the administration, faculty and student body at Northwestern University Medical School consider the optional, partially accelerated program desirable and it is our intention at the present time to return to this plan when full acceleration is discontinued.

DISCUSSION

ON PAPERS OF DR. TRESSIDER, DR. CARPENTER AND DR. MILLER

DR. FRANCIS SCOTT SMYTH (University of California): I have enjoyed these papers very much. I should like to hear some of Dr. Tressider's remarks in relation to our discussion on the integration of the curriculum, for, while we have a Curriculum Committee that is constantly in hot water with some of the *prima donnas* who keep in their ivory towers and do not like this planned change, while we study visual education as a method, we are also concerned with the problem of selection of students on a cultural as well as on a scientific basis. I fear that we will go right back where we were on a compromise between those who insist on the scientific background and those who insist on even inclusion of the cultural subjects.

We do have a fine tradition to maintain in our profession. With regard to the survey which Dr. Carpenter presented, it seems to me that some of the questions are somewhat difficult to answer. For example, with the civilian group, we at once instituted a much more strict physical examination anticipating that the health might be a factor. I would like to have seen in his survey some cognizance of faculty help for our own institutions. We have had two members with heart disease, two with tuberculosis and one with gastric ulcer and I dare say a lot of others who could complain of fatigue.

It seems to me that the whole thing can be divided into theoretical and practical aspects and that it is possible under a perfect selection, to get a group of near geniuses very young who might finish ready to practice medicine, or would they? It is a social profession. There is a certain element of maturation; that we cannot deny. I would be inclined, then, to accept, if we had such young candidates, Dr. Davison's program for a longer postgraduate period of training.

It is rather difficult for me to present any statistics from our own group of students. Our rating system has been altered because the interval between semesters is too short. We now grade them "passed," "with honors" and "not passed." So, again, with the weight of population and with a different rating system, the comparisons with our prewar experience are not possible.

Our student opinion locally has altered as one of the surveys shows and our oral examinations suggest a lack of clinical experience. I would again emphasize that, at least in our school, we depend a great deal on the clinic and bedside instruction and that there is apt to be a neglect when we face this type of teaching with a reduced faculty and a larger class.

A Plan for Postgraduate Refresher Courses

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At the close of the war, on the release of medical officers from the services, there will be a great demand for postgraduate training in all fields of medicine. Most of the younger men will doubtless wish to complete their formal hospital training and many will prepare themselves for specialties. But most of the older physicians, who were already established in practice before the war, will want to return to practice as soon as possible. Many will feel the need for additional training, but hospital residencies and fellowships will not answer their problem. Undoubtedly they will need and demand shorter, more intensive courses. Probably from ten to twelve thousand physicians will want such courses in the postwar period.

At present there are no definite plans to handle this group. There are few established refresher courses in the United States and most of these care for only a small number of physicians each. The problem is acute because it is likely that the older physicians will be released sooner and in larger numbers than the younger men. If their need is not met it is possible that the quality of civilian practice will suffer for years to come.

The criteria for a satisfactory program of short courses are clear. A wide variety of courses will be needed. The courses should begin at frequent intervals since medical officers will undoubtedly be released a few at a time. In each course there should be complete correlation between clinical subjects and the basic sciences. Adequate clinical facilities must be available in all fields.

It is the responsibility of the medical schools to meet this demand. Only the medical schools can satisfy fully the requirements for such courses. The hospitals will be taxed to provide the number of residencies that will be needed for the younger men.

The returning medical officer can look to the Federal Government for help in meeting the cost of his postgraduate training. Under the provisions of the "Servicemen's Readjustment Act of 1944," commonly known as the "G. I. Bill of Rights," the government will pay up to \$500 tuition for each veteran taking a course of from 30 to 38 weeks duration, and will provide for personal maintenance during that time. It is possible that a relatively larger tuition fee will be allowed for shorter intensive courses.

In an attempt to meet the need for short courses, plans are under study at the George Washington University School of Medicine. Although our plans are still in the formative stage, the idea about which we are working seems to be worthy of general consideration.

Basically, the plan consists of a large variety of courses for both the general practitioner and the specialist. The courses are interwoven so as to provide

maximum benefit to the greatest number. In each course we plan to use fully the facilities of the preclinical departments, especially biochemistry, physiology, bacteriology and pathology. Separate courses will not be offered in the pre-clinical subjects with the exception of pathology.

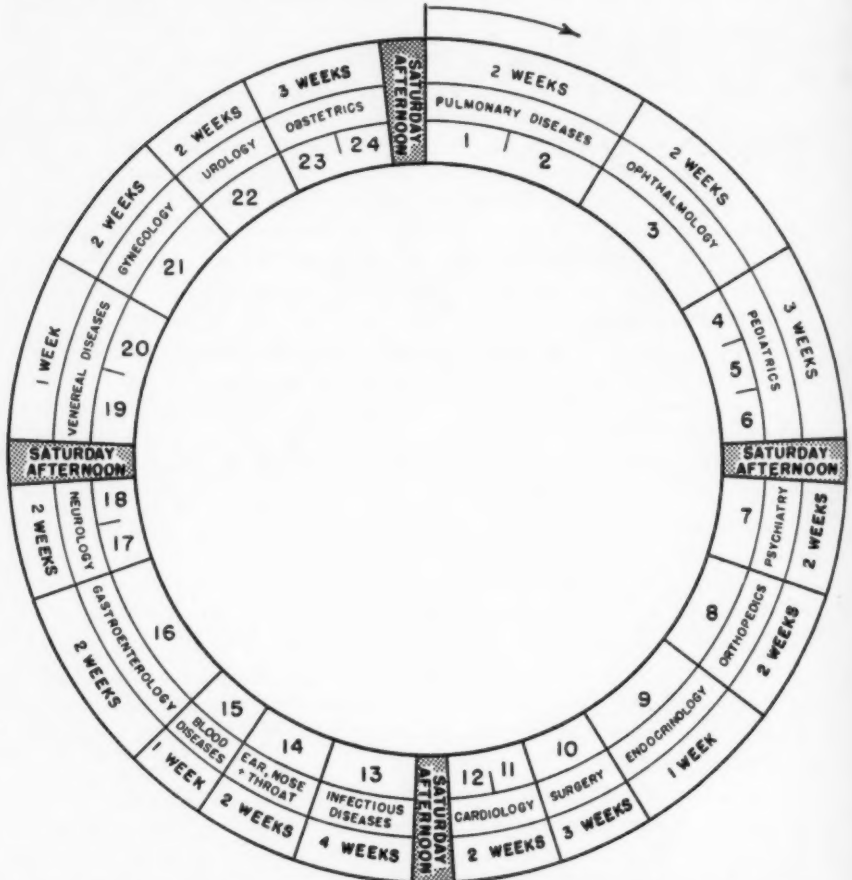


Fig. 1.—The basic four weeks course for the general practitioner is shown in the inner circle. The numbers indicate the days that will be spent jointly with the specialty courses. In the outer circle the duration of each of the specialty courses is shown. The whole circle should be in continuous operation.

The program can be fairly well visualized in a diagram (Fig. 1). A circle is used to emphasize the fact that the course should be in continuous operation. Starting above, and running clockwise, the inner circle represents the basic general practitioner's course of four weeks. In this course the first two days would be spent in pulmonary diseases, the third in ophthalmology and the fourth, fifth and half of the sixth day (Saturday morning) in pediatrics. Monday of the second week would be spent in psychiatry, and so on for the full circle.

In the outer circle the courses in the specialties are shown. In Pulmonary Diseases a course of two weeks is planned. Two days of this period would be held jointly with the course on the inner circle for the general practitioner, and the topics considered on those two days would be those commonly encountered by the general practitioner in the field of pulmonary diseases. Similarly, on the eighth day of the "inner circle," the general practitioner would consider the management of simple fractures with the orthopedist.

But the integration is planned to go much further, as is shown in the second diagram (Fig. 2). Here the courses are shown in their relation to the basic four weeks course and to each other. This chart should be studied along with the abbreviated schedule of each course that is appended. In the chart, common problems are shown as being considered jointly by the specialties concerned. This is a factor determining the position of the different specialties on the circle. Heart disease in infancy and childhood would be considered jointly by pediatrics and cardiology on Monday afternoon of the second week. Skin diseases in children would be scheduled in the courses in pediatrics, allergy and dermatology for Wednesday morning of the second week. Diabetes in children will be handled jointly by pediatrics and endocrinology on Saturday morning of the second week. And so on through a wide range of topics.

Another feature of the system outlined is that the student can take several related subjects in sequence without waste of time. Obstetrics and gynecology follow each other and do not overlap. Neurology and psychiatry are similarly placed. Ophthalmology and otorhinolaryngology can be taken consecutively. The internist or general surgeon can arrange several months of continuous study in fields in which he is interested.

In addition to the courses shown in Fig. 1, other courses are planned to go around in the "outer circle" through several of the specialties. A course in Industrial Medicine is developed in this way, with almost every session being held jointly with some other specialty. Courses in radiology and pathology are also planned to overlap almost all of the other specialties, but the details of these courses have not been completed.

Night sessions can be held from time to time as part of the regularly scheduled courses. They can be so arranged that physicians in practice in the area can profit from the programs.

This joint meeting of different groups to consider common problems should result in great economy and should allow courses to be given to smaller groups. Fewer speakers would be needed than if all courses were given separately. Fewer classrooms and other facilities would be necessary.

But the basic fact seems to be that such joint meetings are desirable for the sake of sound teaching. Very few specialties are so clearly defined that there is no overlapping with other specialties. The pediatrician, for example, has problems that concern almost every other specialty. When the patient presents himself to a physician, that physician must decide whether he himself shall treat the patient or refer him to someone else. The patient is the common denominator

[illegible]

COURSES NOT IN PROGRESS DURING TIME INDICATED BY SHADED SQUARES

Fig. 2.—Here is shown the time relation of the twenty-two courses that have been planned to date. This chart should be studied along with the abbreviated schedule of each course that is appended. The letters in the blocks refer to the letters on the left side of the chart. Hence, where the letter "P" appears on the fourth day of the first week of the course in Pulmonary Diseases, this indicates a joint session with Industrial Medicine. Reference to the topic schedule allows that pneumoconiosis will be under consideration.

The "X" line running obliquely downward and to the right indicates days on which the specialty courses will be held jointly with the basic course for the general practitioner. The large number of letters above on this chart indicates at a glance how many joint sessions are planned. Undoubtedly many improvements can be made in the scheduling.

of the different fields of practice. What could be more logical than a joint consideration of common problems at the level of the patient himself?

To operate such a program as that outlined will be quite a task for the school that undertakes it. Certain compromises could be worked out, such as giving some courses less frequently than once a month. But there would be considerable sacrifice of flexibility and economy. If the need is to be really met, the returning medical officer should be able to begin a course of his own choosing within a week or two after discharge.

It is probable that the demand for good short courses will increase after the war. Far too few are available to meet the actual civilian requirements. Such courses should be very popular with the men who are preparing for specialty board examinations and feel the need for a final intensive course, including the basic sciences, after completion of their hospital training.

The administration of a program such as that outlined will present many difficulties, as is obvious to anyone who has grasped the scope of the plan. But the need will be great, and the opportunity will be equally great.

Day		SUBJECT	
Jointly with		X—GENERAL PRACTITIONER (1-24)	
1	A-C-I	Pneumonia.	
2	A-I	Recognition of pulmonary tuberculosis in the adult.	
3 AM	B	The eye in systemic diseases.	
3 PM	B-T	Foreign bodies in the eye.	
4	C-I	Exanthema of childhood.	
5	C	Care of the newborn and premature. Infant nutrition.	
6 AM	C-I-H	Acute rheumatic fever.	
7	D	Clinical recognition of the psychotic state.	
8	E-T	Management of simple fractures in adults.	
9	F	Diabetes mellitus in adults.	
10	G-T	Office surgery. Treatment of burns.	
11	H	Recognition and dynamics of congestive heart failure.	
12 AM	H	Treatment of heart failure.	
13	I	Sulfones and penicillin in infectious diseases.	
14	J-I-T	The common cold.	
15	K	Diagnosis and treatment of anemias in the adult.	
16	L	Interpretation of digestive symptoms. Office gastroenterology.	
17	C-I-M	Recognition and treatment of meningitis.	
18 AM	M	Interpretation of neurological symptoms.	
19 AM	I-N-P	Gonorrhoea in the male.	
19 PM	I-N-O	Gonorrhoea in the female.	
20	I-N	Primary and secondary syphilis. Latent syphilis.	
21	O	Management of vaginal bleeding. Office gynecology.	
22	P	Medical treatment of urinary tract infections.	
23	Q	Prenatal and postnatal care. Management of normal labor.	
24 AM	I-N-Q	Syphilis in pregnancy.	
		A—PULMONARY DISEASES (1-12)	
1	X-C-I	Pneumonia.	
2	X-I	Recognition of pulmonary tuberculosis in adults.	
3 AM	I	Pulmonary tuberculosis in adults.	
3 PM	I-Q	Pulmonary tuberculosis in pregnancy.	
4 AM	H	Emphysema. Cor pulmonale.	
4 PM	G-S	Surgery and anesthesia in patients with pulmonary disease.	
5	T	Pneumoconioses.	
7 AM	C-I	Pulmonary tuberculosis in children.	
8	J	Neoplasms of lung and mediastinum.	
10 AM	J	Suppurative diseases of lung. Foreign bodies.	
10 PM	I	Virus pneumonia.	
11 AM	I-T	Pulmonary tuberculosis in industry.	
12 AM	R	Bronchial asthma.	

SUBJECT

Day	Jointly with	
2 AM	S	Anesthesia in ophthalmology.
2 PM	C	Diseases of the eye in children.
3 AM	X	The eye in systemic diseases.
3 PM	X-T	Foreign bodies in the eye.
4	T	Protection of the eyes in industry. Injuries of eyes.
5 AM	I	Infectious diseases of the eyes, other than gonorrhoea and syphilis.
22 AM	I-N	Gonorrhoeal ophthalmia. Syphilis of the eye.
22 PM	M	Eyes in diseases of the nervous system.

C—PEDIATRICS (1-18)

1	X-A-I	Pneumonia.
2 AM	Q	Maternal factors in infant mortality.
2 PM	B	Diseases of the eyes in children.
3	E	Injuries and diseases of bones and joints in children.
4	X-I	Exanthema of childhood.
5	X	Care of newborn and premature. Infant nutrition.
6 AM	X-H-I	Acute rheumatic fever.
7 AM	A-I	Pulmonary tuberculosis in children.
7 PM	H	Heart disease in infancy and childhood.
8 AM	D	Mental deficiency in children.
8 PM	L	Polycystic disease of pancreas and related disorders.
9 AM	R-U	Skin diseases of infancy and childhood.
10 AM	I-L	Gastro-intestinal infections in children.
10 PM	J	Recognition and treatment of otitis and mastoiditis in children.
11	G-S	Surgery and anesthesia in children.
12 AM	F	Diabetes and other endocrine disorders in children.
14	K	Erythroblastosis and anemia in childhood. Purpura. Leukemia and leukemoid reactions in children.
15 AM	I-M	Poliomyelitis.
15 PM	I	Preventive medicine in children.
16 AM	P	Urinary tract infections in children.
16 PM	M	Neurologic disorders of childhood.
17	X-I-M	Recognition and treatment of meningitis.

D—PSYCHIATRY (1-12)

6 AM	T	Psychoneuroses in industry.
7	X	Clinical recognition of the psychotic state.
8 AM	C	Mental deficiency in children.
8 PM	Q	Psychiatric manifestations during pregnancy and the puerperium.
11 AM	F	The endocrines and mental diseases.

E—ORTHOPEDIC SURGERY (1-12)

1 PM	T	Injuries of tendons.
2	T	Medico-legal aspects of orthopedics and industrial medicine.
3	C	Injuries and diseases of bones and joints in children.
8	X-T	Management of simple fractures in adults.
10 PM	S	Anesthesia in orthopedics.

F—ENDOCRINOLOGY (7-12)

8 AM	G	Recognition and management of hyperthyroidism.
9	X	Diabetes mellitus in the adult.
10 AM	Q	The endocrines and infertility.
10 PM	Q	The endocrines and pregnancy.
11 AM	D	The endocrines and mental disease.
11 PM	U	The endocrines and skin diseases.
12 AM	C	Diabetes and other endocrine disorders in children.

G—SURGERY (1-12; 19-24)

1 PM	S	Choice of anesthetic method and anesthetic agent.
3	S	Preoperative and postoperative care. Blood transfusions and blood substitutes.
4 PM	A-S	Surgery and anesthesia in patients with pulmonary disease.
5 PM	H-S	Surgery and anesthesia in patients with cardiovascular disease.
8 AM	F	Recognition and management of hyperthyroidism.

Day	Jointly with	SUBJECT
8 PM	H	Vascular surgery.
9 AM	L	Diagnosis and management of peptic ulcer.
9 PM	L	Differential diagnosis in jaundice.
10	X-T	Office surgery. Treatment of burns.
11	C-S	Surgery and anesthesia in children.
12 AM	I	Erysipelas. Wound infections. Tetanus.
19 AM	Q	Emergency surgery during pregnancy.
19 PM	Q	Cesarean section.
21	M	Injuries of spine and peripheral nerves.
23	M	Head injuries.

H—CARDIOLOGY (1-12)

3 AM	T	Heart disease in industry.
4 AM	A	Emphysema. Cor pulmonale.
5 PM	G-S	Surgery and anesthesia in patients with cardiovascular disease.
6 AM	X-C-I	Acute rheumatic fever.
7 PM	C	Heart disease in infancy and childhood.
8 AM	Q	Heart disease in pregnancy.
8 PM	G	Vascular surgery.
10 AM	R	Vascular allergy. Periarteritis nodosa.
10 PM	L	Heart disease and the gastrointestinal tract.
11	X	Recognition and dynamics of congestive heart failure.
12 AM	X	Treatment of heart failure.

I—INFECTIOUS DISEASES (1-24)

1 AM	X-A-C	Pneumonia.
2	X-A	Recognition of pulmonary tuberculosis in the adult.
3 AM	A	Pulmonary tuberculosis in the adult.
3 PM	A-Q	Pulmonary tuberculosis in pregnancy.
4	X-C	Exanthema of childhood.
5 AM	B	Infectious diseases of eyes other than gonorrhoea and syphilis.
6 AM	X-C-H	Acute rheumatic fever.
7 AM	A-C	Pulmonary tuberculosis in children.
7 PM	L-T	Food poisoning in adults.
8 AM	L	Typhoid fever and related diseases.
8 PM	U	Common infectious diseases of the skin.
9 AM	J	Septic sore throat.
9 PM	R	Drug allergy and serum sickness.
10 AM	C-L	Gastrointestinal infections in children.
10 PM	A	Virus pneumonia.
11 AM	A-T	Pulmonary tuberculosis in industry.
11 PM	Q	Infectious diseases during pregnancy.
12 AM	G	Erysipelas. Wound infections. Tetanus.
13	X	Sulfones and penicillin in infectious diseases.
14	X-J-T	The common cold.
15 AM	C-M	Poliomyelitis.
15 PM	C	Preventive medicine in children.
16	K	Infectious mononucleosis. Blood in infectious diseases. Sulfones and blood dyscrasias.
17	X-C-M	Recognition and treatment of meningitis.
18 AM	P	Urinary tract complications in sulfone therapy.
19 AM	X-N-P	Gonorrhoea in the male.
19 PM	X-N-O	Gonorrhoea in the female.
20	X-N	Primary and secondary syphilis. Latent syphilis. (Unassigned.)
21 AM	N	Chancroid, lymphopathia, etc.
22 AM	B-N	Gonorrhoeal ophthalmia. Syphilis of the eye.
22 PM	N	Serologic tests for syphilis.
23	N	Treatment of syphilis. Rapid treatment.
24 AM	X-N-Q	Syphilis in pregnancy.

J—EAR, NOSE AND THROAT (7-13)

7 PM	S	Anesthesia in ear, nose and throat surgery.
8	A	Neoplasms of lung and mediastinum.
9 AM	I	Septic sore throat.

Day	Jointly with	SUBJECT
10 AM	A	Suppurative diseases of lung. Foreign bodies.
10 PM	C	Recognition and treatment of otitis and mastoiditis in children.
11 PM	R	Allergic diseases of the nose and throat.
13 PM	L	Esophagoscopy and gastroscopy.
14	X-I-T	The common cold.
K—DISEASES OF THE BLOOD (13-18)		
13 PM	M	Anemia and neurological disorders.
14	C	Erythroblastosis and anemia in childhood. Purpura. Leukemia and leukemoid reactions in children.
15	X	Diagnosis and treatment of anemias in the adult.
16	I	Infectious mononucleosis. Blood in infectious diseases. Sulfones and blood dyscrasias.
17 AM	T	Anemias due to occupational factors.
17 PM	L	Recognition and management of anemias due to gastrointestinal disorders.
L—GASTROENTEROLOGY (7-18)		
7 PM	I-T	Food poisoning in adults.
8 AM	I	Typhoid fever and related diseases.
8 PM	C	Polycystic disease of pancreas and related disorders.
9 AM	G	Diagnosis and management of peptic ulcer.
9 PM	G	Differential diagnosis in jaundice.
10 AM	C-I	Gastrointestinal infections in children.
10 PM	H	Heart disease and the gastrointestinal tract.
11 AM	R	Allergic states of the gastrointestinal tract.
11 PM	T	"Nervous indigestion."
13 PM	J	Esophagoscopy and gastroscopy.
16	X-T	Interpretation of digestive symptoms. Office gastroenterology.
17 PM	K	Recognition and management of anemias due to gastrointestinal disorders.
M—NEUROLOGY (13-24)		
13 PM	K	Anemia and neurological disorders.
15 AM	C-I	Poliomyelitis.
16 PM	C	Neurologic disorders in childhood.
17	X-C-I	Recognition and treatment of meningitis.
18 AM	X	Interpretation of neurological symptoms.
20 AM	P	Spinal cord and diseases of urinary bladder.
21	G	Injuries of spine and peripheral nerves.
22 PM	B	Eyes in diseases of nervous system.
23	G	Head injuries.
N—VENEREAL DISEASES (19-24)		
19 AM	X-I-P	Gonorrhoea in the male.
19 PM	X-I-O	Gonorrhoea in the female.
20	X-I	Primary and secondary syphilis. Latent syphilis.
21 AM	I	(Unassigned.)
21 PM	I	Chancroid, lymphopathia, etc.
22 AM	B-I	Gonorrhoeal ophthalmia. Syphilis of the eye.
22 PM	I	Serologic tests for syphilis.
23	I	Treatment of syphilis. Rapid treatment.
24 AM	X-I-Q	Syphilis in pregnancy.
O—GYNECOLOGY (13-24)		
15 AM	T	Dysmenorrhoea.
19 PM	X-I-N	Gonorrhoea in the female.
21	X	Management of vaginal bleeding. Office gynecology.
P—UROLOGY (13-24)		
15 PM	T	Occupational diseases of the urinary tract.
16 AM	C	Urinary tract infections in children.
18 AM	I	Urinary tract complications in sulfone therapy.
19 AM	X-I-N	Gonorrhoea in the male.
20 AM	M	Spinal cord and diseases of the urinary bladder.
21 AM	Q	Urinary tract in pregnancy.
22	X	Medical treatment of urinary tract infections.

Jointly with		SUBJECT
Q—OBSTETRICS (1-12; 19-24)		
2 AM	C	Maternal factors in infant mortality.
3 PM	A-I	Pulmonary tuberculosis in pregnancy.
8 AM	H	Heart disease in pregnancy.
8 PM	D	Psychiatric manifestations during pregnancy and the puerperium.
9	S	Anesthesia and analgesia in obstetrics.
10 AM	F	The endocrines and infertility.
10 PM	F	The endocrines and pregnancy.
11 PM	I	Infectious diseases during pregnancy.
12 AM	T	The pregnant woman in industry.
19 AM	G	Emergency surgery during pregnancy.
19 PM	G	Cesarean section.
21 AM	P	The urinary tract in pregnancy.
23	X	Prenatal and postnatal care. Management of normal labor.
24 AM	X-I-N	Syphilis in pregnancy.
R—ALLERGY (7-12)		
7 AM	T-U	Occupational dermatoses.
7 PM	U	Other allergic skin diseases in the adult.
9 AM	C-U	Skin diseases of infancy and childhood.
9 PM	I	Drug allergy and serum sickness.
10 AM	H	Vascular allergy. Periarthritis nodosa.
11 AM	L	Allergic states of the gastrointestinal tract.
11 PM	J	Allergic diseases of the nose and throat.
12 AM	A	Bronchial asthma.
S—ANESTHESIA (1-12)		
1 PM	G	Choice of anesthetic method and anesthetic agent.
2 AM	B	Anesthesia in ophthalmology.
3	G	Preoperative and postoperative care. Blood transfusions and blood substitutes.
4 PM	A-G	Surgery and anesthesia in patients with pulmonary disease.
5 PM	G-H	Surgery and anesthesia in patients with cardiovascular disease.
7 PM	J	Anesthesia in ear, nose and throat surgery.
9	Q	Anesthesia and analgesia in obstetrics.
10 PM	E	Anesthesia in orthopedics.
11	C-G	Surgery and anesthesia in children.
T—INDUSTRIAL MEDICINE (1-18)		
1 PM	E	Injuries of tendons.
2	E	Medicolegal aspects of orthopedics and industrial medicine.
3 AM	H	Heart disease in industry.
3 PM	X-B	Foreign bodies in the eye.
4	B	Protection of the eyes in industry. Injuries of the eyes.
5	A	Pneumoconioses.
6 AM	D	Psychoneuroses in industry.
7 AM	R-U	Occupational dermatoses.
7 PM	I-L	Food poisoning in adults.
8	X-E	Management of simple fractures in adults.
10	X-G	Office surgery. Treatment of burns.
11 AM	A-I	Pulmonary tuberculosis in industry.
11 PM	L	"Nervous indigestion."
12 AM	Q	The pregnant woman in industry.
14	X-I-J	The common cold.
15 AM	O	Dysmenorrhoea.
15 PM	P	Occupational disease of urinary tract.
16	X-L	Interpretation of digestion symptoms. Office gastroenterology.
17 AM	K	Anemias due to occupational factors.
U—DERMATOLOGY (7-12)		
7 AM	R-T	Occupational dermatoses.
7 PM	R	Other allergic skin diseases in the adult.
8 PM	I	Common infectious diseases of skin.
9 AM	C-R	Skin diseases of infancy and childhood.
11 PM	F	The endocrines and skin diseases.

Medical Education in Wartime

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With the eventual return of peace, the majority of those who are vitally interested in and concerned with undergraduate medical education will have experienced the effect of two major wars on the supply of properly trained graduates in the critical field of medicine. It must be admitted that procedures which were advocated, and those adopted, for the continuation of medical studies during the first of these world wars are a part of the hazy and indefinite past. Those adopted during the present conflict are perhaps so close to us that an unbiased perspective appears difficult. It is, however, obvious that it is now that a comprehensive study should be undertaken in order to arrive at a sound consideration of steps to assure a continuous supply of young physicians, both for the armed forces and for the nation, in the event of a third world war. We must profit by the lessons of the current experiments of the Army and the Navy in the field of medical education. A study so vital to the future of medical education and to the medical service of the nation should not be postponed.

A careful evaluation of the two armed services' program for medical training should be made, not with a view to praise, censure, or invidious comparison, but simply as a basis for sound conclusions and for a recommendation by medical educators—by the Association of American Medical Colleges—which may serve as a guide to possible future college programs in this field undertaken by any agency of the Federal government.

The desirability of adopting provisions to assure the continuation of undergraduate medical education during periods of national emergency in which the youth of the nation is recruited for or conscripted into the armed forces must be considered from two complementary but seemingly contradictory points of national interest: the requirements of the forces for young, able-bodied males of high intelligence for training and service in active defense of the country in time of war; and those of the entire nation for an adequate and continuous supply of physicians. If during the next possible national emergency, or in the years intervening between it and the current emergency, the age at which the youth of the country is made available to the armed forces for the maintenance of national security remains 18, it must be recognized that practically all prospective physically qualified male students of medicine will be under the jurisdiction of the armed forces: relatively few men will, prior to their 18th birthday, have been identified as medical students, either through actual registration in medical school or through formal acceptance for admission to a future entering class

for the study of medicine. This fact was of less importance in 1917 and in 1940. During World War I Selective Service age was not lowered to 18 until August 1918 and no one was inducted into the armed forces under the age of 21. During the present conflict young men of 18 did not become subject to Selective Service call until November of 1942. It is highly improbable that such a delay will obtain in a future emergency.

If it becomes advisable for the armed forces to take steps to assure their own supply of professionally trained men, the civilian and military interests in provisions for the continuation of training in this field largely coincide. The question, however, must necessarily be raised: does the responsibility of the armed forces to maintain such a continuous supply of physicians extend beyond the known or anticipated demands of those forces themselves?

It is not my intention in this short paper to attempt an evaluation of medical training as conceived and carried out under the Army Specialized and Navy College Training Programs. Nor will I seek replies to the numerous questions which such a study must necessarily consider. I do wish, however, to point out that a careful, dispassionate study should be made and that definite recommendations should be formulated. We must not leave the succeeding generation of medical educators, and of those interested—or disinterested—in medical education within the armed forces themselves, to arrive at a solution of so vital an issue through the potentially disastrous policy of trial and error.

The following points are applicable to the problem of medical education in wartime whether universal military training has been adopted as a national peacetime policy, and funds implementing such a policy voted each year by the Congress, or whether the employment of the manpower of the country remains vested in strictly civilian agencies. It is suggested that these points be given careful consideration.

First, and perhaps foremost, is the basic training question: Shall any steps be taken with a view to the continuation of undergraduate medical studies in wartime? Shall such provisions be directed only toward the individual students who are currently in medical schools and to those accepted for admission for the next entering classes in medicine, whether registrants under Selective Service System or members of reserve components of the armed forces as a result of legislation which has been proposed for universal military training? Or shall provisions be extended to their replacement in order to avoid the curtailment of the supply of physicians at its source, the premedical student?

Second, if provisions for this training are considered to be necessary, what shall they be? Shall the individual student continue his preparation for the study and practice of medicine as a civilian through the deferment of his call to or induction into active military service? Shall the young student who is

considered best qualified to render future medical service to the armed forces, and to the nation, be required to forego his birthright of current military service in order to serve later in the capacity for which he is so qualified? Shall the study of medicine during wartime be the privilege, or the misfortune, of the civilian who is willing to remain out of uniform?

In brief, is it recommended by medical educators that during wartime medical students be exempted from military service for a period of years, whether through deferment by Selective Service or through the postponement of their call to active duty by the armed forces themselves? Or shall medical students enter the active military service of the country, and shall the armed forces take the necessary steps to discover these potential physicians and assign them to the definite military duty of undergoing the training necessary to make them available, as physicians, to the armed forces and to the nation?

In considering these two solutions to the problem, the lessons of 1917-1918 and those of 1940-1944 must be reviewed. However, in applying these lessons to some future national emergency, possible changes in the psychology of these potential physicians must also be considered. The unwillingness of the medical student to continue in or to enter upon the study of medicine out of uniform in 1918 does not appear to have been present in 1944, when a large number of accepted matriculants within the Army were given the option of discharge in order that they might enter medical school as civilians. The latter were perhaps more conscious of their high calling than their fathers; almost to a man they accepted discharge.

It must also be realized that, if during the next national emergency the age at which the youth of the country are inducted into the armed forces remains 18, few replacements for medical students will be available even if provisions are made for the continuation of the medical study of those actually in medical school and of those accepted for admission to the next entering class in medicine. Unless qualified candidates for the study of medicine are replaced, a shortage of physicians will necessarily result.

Whether medical instruction during wartime is to be effected on an active duty status or on an inactive or deferred status, certain problems which are strictly academic must be considered. The continuation of deferment, or of inactive duty, must be contingent upon continuous and satisfactory progress in the study of medicine and upon its completion in the minimum period of time. An accelerated program of instruction, as well as one to which 48 weeks in each calendar year are devoted, will become a necessary evil. If medical students are to be replaced, under either plan, classes must be admitted at as frequent intervals as practicable. In like manner, a uniform policy regarding the repetition of work by academic failures must govern not only the armed forces trainees

but also the deferred registrants and the reservists whose call to active duty has been postponed.

If training is to be conducted by the Army and the Navy, the status of the enlisted trainee must be understood and the relation of the military to the academic carefully defined. Medical trainees are soldiers in college, not students in uniform. Uniformity in programs conducted by separate services is highly desirable; the good and bad features of both the Army and the Navy programs should be carefully analyzed.

Recommendations regarding group housing and messing should be based upon a study of the academic progress of trainees at those schools in which both or either were required. The mere convenience of the trainee and his desire to be free from military restriction are not valid reasons for granting monetary allowances for commutation of quarters and rations.

The maximum practicable time should be made available for military instruction and for physical training. Neither should, however, be such as to interfere with the trainees' academic progress.

If medical trainees are to be replaced—that is, if the program is to be continuous regardless of the anticipated duration of the emergency—the entire question of premedical training must be examined. These questions include: both the content and the length of the premedical curriculum; the sequence of courses in the curriculum; the selection of premedical trainees from among candidates for the study of medicine; screening methods and prerequisites for selection; criteria of achievement of premedical trainees; designation of trainees for medical training and assignment to specific units for such instruction.

It is granted that assignment by number rather than by name is not desirable; the possible practicability of assignment of Army selected and Army trained premedical trainees to specific units for instruction in medicine itself on a basis of "bilateral selection" by the trainees and by the medical school concerned should be very carefully studied.

Special consideration should be given to the different plans for the selection of premedical trainees which were adopted by the two services; the selection of V-12 premedical trainees direct from civil life, many of whom were high school graduates only; and that of ASTP premedical trainees from among candidates who were successfully completing two or three terms of the ASTP Basic Curriculum of undifferentiated college studies.

Contractual relations with the government should be examined, as should the question of the supply and disposition of textbooks and instruments. Pertinent observations regarding medical and dental service for medical trainees should be included in the study.

Among other questions which may advantageously receive careful consideration are: steps to be taken prior to or upon the declaration of a national emergency to assure the maintenance of medical school faculties adequate for the conduct of the accelerated wartime instruction of military personnel; the possible detail of selected medical and other officers, preferably faculty members, to the teaching staffs of medical schools; the maintenance of an adequate number of residents and assistant residents in teaching hospitals.

All pertinent data obtained by the Army and by the Navy regarding the progress of Army Specialized Training Program and V-12 trainees in both the medical and the premedical phases of these two programs should be made available to any individual or committee charged by the Association of American Medical Colleges with the responsibility of such a study. The report might advantageously be published in the Journal of the Association in advance of the next annual meeting, at which full discussion of the problems involved could lead to its approval, or to desired modifications of the report. As finally published the conclusions and recommendations should be those of the Association. Concurrence by the Council on Medical Education and Hospitals of the American Medical Association would be desirable.

The report and recommendations should then be submitted to the Secretaries of War and Navy and to the Director of the Selective Service System for their information and for their possible guidance in arriving at a satisfactory solution of the problem of medical education in wartime should the present conflict not prove to have been that much desired, but highly improbable, "war to end all wars."

Report of Committee on Postgraduate Education Southwestern Medical College

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The need for facilities to train returning medical personnel of our Armed Forces has been stressed repeatedly¹ and the problem focused so sharply that few would deny the desirability, the obligation and the necessity of preparing to meet it. Needs, however, will vary with time and can be divided into three periods:

- I. The present,—lasting until the end of the war.
- II. The immediate postwar period,—lasting from 3 to 5 years.
- III. The late postwar period,—involving a permanent program.

THE PRESENT

It would seem that not only is there little demand for postgraduate training at the present time, but also that the Southwestern Medical Foundation and College are in no position to do much more than carry on the developments so admirably begun, and perfect plans for periods II and III.

THE IMMEDIATE POSTWAR PERIOD

During this period, we will be faced with 2 groups of physicians who will look to their medical schools and colleges for training:

- I. Physicians returning from the Armed Forces
 - A. Specialists, or specialists in training
 1. Withdrawn from practice
 2. Withdrawn upon completion of training but before practice began
 3. Withdrawn during training
 4. Withdrawn after an internship before training could be started
 - B. General practitioners
 1. Wishing to resume practice
 2. Wishing to begin practice, having entered the Armed Forces directly from an internship
- II. General practitioners who remained at home but were busy carrying on the exacting demands of an expanded practice.

We owe a great debt to both these groups, but especially to the men returning from war.

GROUP I A-1.—Specialists withdrawn from practice, in the majority of instances, may be expected to return to their previous locations. They will need little beyond a brief course of lectures to acquaint them with developments in the special fields while they were away. There should be no great problem here.

The needs of the next group, physicians who completed their specialty training but joined the colors before beginning practice, will be similar to group I A-1. Moreover, this group will not be large since it will include only the output during one or two years after the onset of the war of the various institutions approved for residency training.

On the other hand, our greatest responsibility will be incurred in the next two groups; those young physicians whose specialty training was interrupted or never began. In the "Preliminary Report by the Council on Medical Education and Hospitals of the American Medical Association," it is estimated that, "approximately 12,000 graduates of recent years are now serving in the Armed Forces whose previous training did not extend beyond the intern year. Perhaps 6,000 of this group will later seek hospital appointments. In addition, there is the possibility that some 2,000 former residents may return to complete their original assignments or establish themselves in other specialties."

Before the war, the 660 civilian hospitals approved for residency training supplied facilities for approximately 5,500 resident physicians. Each of these men was assured at least the potential ability to satisfy the requirements of the American Board of the specialty of his choice. Also, the lay public was assured a yearly quota of well trained and qualified specialist physicians. This flow of specialists into practice has largely ceased. For as many years, therefore, as the war lasts, minus 1 or 2 (specialists near the end of training who were allowed to complete before joining the colors) there will be a hiatus in the specialty group. This will seriously threaten the high standard achieved by American medicine.

Between 1929 and 1937, the American Boards representing the various specialties were organized. Their influence in elevating standards of medical practice cannot as yet be estimated, but it is safe to say that it will be profound. They have provided and maintain recognized standards by which specialist ability can be measured. Generally, these standards have been accepted by physicians, and certification by an American Board is a *sine qua non* for hospital staff appointments in many localities and for admission to most of the national and many of the regional specialty societies. In other localities, however, apathy exists.

Since certification by an American Board means so much at the present time, and will become increasingly important, it cannot be recommended too strongly that any program of residency training for our returning Army, Navy and Marine physicians be developed on the basis of adequate preparation for certification by an American Board. It is believed that to aim at less will have tragic consequences not only for the physician, for American medicine, but also for the lay public.

If the Southwestern Medical Foundation accepts the standards of the various specialty boards in developing a program for these returning service physicians, there is evident an immediate need for expansion of residency facilities in Dallas. The facilities available in Dallas as of September 1, 1943, are shown in Table 1. In the Council report it is specifically stated that the Council "... does not

wish to encourage the organization of new residencies, fellowships and post-graduate courses unless satisfactory facilities can be provided." Fortunately, the establishment of the Southwestern Medical College in Dallas offers a tremendous impetus for the organization of new residencies on a sound and permanent basis. In this regard, the Southwestern Medical Foundation is in a favorable position, since because of natural growth we may correctly maintain that development of new residencies and fellowships is essential to leadership in medicine in the Southwest, and is not on the basis of postwar emergency.

Of 556 members of the Dallas County Medical Society, 150, or 26.9 per cent, have gone to war. Of 7,000 physicians in Texas, approximately 1,800, or 25.9 per cent, have gone to war. If we estimate one-fourth of them as recent graduates, there will be approximately 40 Dallasites and 450 Texans of whom, perhaps, one-half will seek hospital appointments. Preference, of course, should

TABLE 1.—RESIDENCIES AND FELLOWSHIPS APPROVED BY THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS OF THE AMERICAN MEDICAL ASSOCIATION;
REVISED TO SEPTEMBER 1, 1948.

		No. Years Approved	Length of Service
Parkland	Medicine	3	*
	Obstetrics	2	
	Orthopedic surgery	1	
	Pathology	1	
	Radiology	1	
	Surgery	2	1
	Urology	1	
Baylor	Medicine	2	1-3
	Pathology	1	1
	Radiology	2	1-2
	Surgery	2	1-3
Texas Scottish Rite Hospital for Crippled Children	Orthopedic Surgery	1	1
Children's Memorial Medical Center	Pediatrics	2	1-2
St. Paul's Hospital	Surgery	2	1

* Length of service indefinite.

Specialties for which no approved residency is listed as available in Dallas: Anesthesiology, Cardiology, Gynecology, Dermatology and Syphilology, Neurology, Neurosurgery, Ophthalmology, Otolaryngology, Psychiatry, Thoracic Surgery, Traumatic Surgery, Tuberculosis.

be given to men whose residency training was under way and interrupted. In the case of men desiring to begin residency training, it is suggested that they be scrutinized carefully and accepted only if they meet standards which were in force before the war. In other words, there must be more than a desire on the part of the returning soldier to justify the granting of residency training.

To accommodate this group, it is suggested that the program of development and expansion of residencies at Parkland, Baylor, St. Paul and Methodist Hospitals be continued and that terms of service be made sufficiently flexible so that extra residents may be engaged. Provision for funds to offer stipends to these men must be contemplated by the hospitals. Already a start has been made at Parkland, Baylor, St. Paul and Methodist Hospitals.

Some of these men may be placed on Fellowships in the Foundation, where they will do research, acquire some of the training in the basic sciences de-

manded by the Boards, teach and do some clinical work in the various hospitals and clinics. Such men should be given a liveable stipend by the Foundation.

In addition, the Foundation might give some consideration to the establishment of a system similar to that of the Graduate School of Medicine of the University of Pennsylvania. Under this scheme, didactic courses covering basic sciences and clinical theory would be set up to last an academic year. Following this, the physician would be "farmed" out as assistant to previously chosen and recognized specialists holding Board certification. Such apprenticeships under preceptors is acceptable training for Board requirements.

It will be noted that nothing has been said concerning men who want to be specialists but wish to practice and acquire training simultaneously. It is believed that such men should be given no consideration under this program since the time to educate the doctor is universally recognized to be before he enters practice.

B. General practitioners, Groups I-B 1 & 2, physicians desiring to resume or to begin general practice, may require some refresher courses and for recent graduates a certain amount of internship may be desirable.

GROUP II.—General practitioners who remained at home may desire some postgraduate work. Existing facilities include the Dallas Southern Clinical Society and the Lectureship Bureau of the Dallas County Medical Society.

In addition to the latter, the staff of the Southwestern Medical College must be prepared to meet, at least, a majority of the calls to speak at County Medical Societies which now come, and will come in increasing number in the future. We should encourage these calls, but should also give thought to developing a system for reimbursing the faculty member for expenses. The Foundation might decide to bear this minor expense, but, on the other hand, it would seem to be desirable to encourage the sentiment that the county society presenting the invitation guarantee expenses.

Finally, the Saturday schedule of classes in the Medical College has been developed wisely so that it can readily be expanded to offer much of interest to physicians within a radius of 100 miles of Dallas. Basic subjects, specialty subjects, clinics, wet or dry, but preferably the latter, and the time honored clinical pathologic conference could be integrated into a well rounded and interesting Saturday morning's program. If such is contemplated, it is believed that the formality of enrollment with a small fee will lend dignity and stimulate interest.

THE LATE POSTWAR PERIOD

Since the entire field of medicine develops and changes rapidly, some form of postgraduate education or continuation study is an essential part of any first rate medical center. Not only must we help our alumni and all physicians in the neighborhood to keep abreast of medical progress, but also thought must be given to establishment of a program to include the physicians of Latin American countries who will of necessity look to America for guidance in medical education.

Several methods have been used in the past, notably in obstetrics and pedi-

atrics, by the several states and the Federal government, including local refresher lecture courses and practical work at selected centers. While local refresher lecture courses have a small place, it is recommended that their value is insufficient to justify their expense and trouble in a serious, long time program of postgraduate work.

A program of utilization of the small community hospital in postgraduate education should be mentioned. The Commonwealth Fund has taken an active interest in these programs.² There has been a considerable development of out-lying ancillary hospitals in Louisiana. Briefly, the system is one of teaching on the doctor's home ball field, so to speak. Guest teachers and clinicians representing the various specialties go out from the medical center for several days' stay. Primarily, they act in an advisory capacity, but may take an active part in diagnosis and care of patients. Such bedside teaching would have much to recommend it and although development might be difficult it should be considered.

The idea of offering courses of one to several weeks' duration at the medical center is a project which should be given considerable thought and attention. Since the Center for Continuation Study at the University of Minnesota is so well developed and so popular, it is recommended that any permanent plans might well be modeled on this basis. Such a center would involve a suitable permanent building, faculty additions and sufficient money to operate it.

It is believed that the faculty should not be asked to accept this extra work without increase in personnel and some form of honorarium for those members who give extra time. Furthermore, faculty members should be given option and not coerced into teaching in such a center.

The teaching of foreign physicians could be handled in a continuation center except in the case of young men desiring residency training. These, of course, could be absorbed into residencies and fellowships already developed.

COMMENT

Much of this program can be instituted without great expense. Residents can be paid by the several hospitals. Fellows could be paid by the Foundation. Not only must they receive a liveable stipend, but also there will be a certain expenditure for laboratory space, supplies, et cetera. Since various national groups have been interested, and probably will continue interest postwar, it is possible that funds to underwrite certain parts of the program might be available.

So far as a Center for Continuation Study is concerned, it would seem that this project might have an especial appeal to certain wealthy citizens, particularly if the appeal is made on the basis of attracting Latin American students, and thereby Latin American attention, to Dallas.

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School of Hygiene's Wartime Job

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The London School of Hygiene and Tropical Medicine is one of the results of the plans for reconstruction which followed World War I. It was in 1921 that a committee set up by Great Britain's Minister of Health advocated the establishment of a central institution, affiliated with the University of London, wherein full provision should be made for teaching and research in all branches of preventive medicine. Funds for the building and equipment of such a school were generously provided by the Trustees of the Rockefeller Foundation of New York and the British Government agreed to make an annual grant for the maintenance of the institution.

Primarily intended for the training of medical men and women desirous of entering public health services in Great Britain and abroad, the role of the school was very soon enlarged to include teaching and research in the hygiene and diseases of the tropics. It was at a later date that the Ross Institute of Tropical Hygiene, a permanent memorial to Sir Ronald Ross, the great medical pioneer in the study of malaria, was incorporated with the school. This incorporation was both logical and essential since the work of the Ross Institute is concerned with putting into practice in the tropics the measures which research workers have shown to be necessary for the control of malaria, the disease which probably takes a greater toll of life and efficiency than any other illness of mankind.

In its fifteen years of work in peace and war, the school has achieved a world wide reputation, not only through its old students, who are now at work at home and overseas, but also through the human contacts and free interchange of ideas between its scientific staff and scientific workers in many other countries of the world.

The school is organized in eight main teaching research departments, namely Public Health, Epidemiology and Vital Statistics, Bacteriology and Immunity, Biochemistry, Chemistry as applied to Hygiene, Entomology, Parasitology and Clinical Tropical Medicine. The key department is that of Public Health which has coordinated the main teaching work of the school. Instruction is given by its own staff and by visiting lecturers of eminence, in the theory and practice of public health administration in such matters as housing, control of the purity of the food supply, the control and treatment of infectious disease, sanitary engineering and, indeed, in every aspect of preventive medicine.

Two sections of the department deserve special mention—the sections of Medical Industrial Psychology and of Industrial Physiology, including general physiology applied to hygiene. These sections give instruction to the students on the many psychological and physiological conditions which may affect the happiness and efficiency of the industrial worker. Some of the staff of these sections

are field and laboratory workers of the Industrial Health Research Board, an official body concerned for many years with the solution of problems which exist in industry.

The Department of Epidemiology and Vital Statistics covers an immense range in its research and its teaching. Students are taught the history of epidemics of infectious disease, their effect on the structure of humanity and the lessons which can be learned from these experiences. They are also taught that a knowledge of statistics is nowadays an absolutely essential part of the equipment of the medical man or the scientist, in field work and in the laboratory and are instructed in those methods which are mainly of use in the analysis of the vital figures of mortality and morbidity. By the intelligent use of these methods of analysis preposterous conclusions from observed data can be avoided and truthful deductions of the greatest value can often be made. Students representative of many different interests and of many different countries have worked in this department.

The Department of Bacteriology and Immunology is concerned with the study of the bacteria and filtrable viruses which cause disease in man and animals. It deals, in particular, with those problems which touch, directly or indirectly, on the prevention or control or treatment of community infection—the ways in which disease is spread from man to man, from animal to animal, or from animal to man; the ways in which such spread may be hindered by stopping the natural channels of infection or by raising the resistance of those liable to attack.

Of great importance also is the study of those methods of bacteriological examination whereby the safety of water supplies, milk and food is controlled.

The Department of Biochemistry, with which may be included chemistry as applied to hygiene, is very largely a research department. So far as teaching is concerned, the department undertakes instruction in the chemical aspects of water supply and its purification, the disposal and purification of drainage and other refuse, and the chemical analysis of foodstuffs. Here, too, is given the main body of instruction in the scientific bases of human nutrition in regard to quantity and balance, and the association between nutrition and resistance to disease.

In the Department of Parasitology are combined the studies of Helminthology and of Protozoology. While worms and protozoa play only a minor part in disease causation in man in Great Britain, they are of major importance in the tropics in such diseases as malaria, ancylostomiasis, bilharziasis and sleeping sickness.

A considerable number of diseases of economic importance in stock and crops in Britain are caused by worm parasites which are closely related to those found in man. There is, therefore, associated with this department an Institute of Agricultural Parasitology, located at Winches Farm, St. Albans, where these problems are the subject of intensive study by a special staff, financed by the Ministry of Agriculture and Fisheries, and working under the auspices of the

Agricultural Research Council. The results of these investigations are published in the Institute's quarterly *Journal of Helminthology* which has now completed twenty-one years of publication.

The Department of Entomology is concerned with teaching and research in the life histories and control of insects which play a dominant role in the spread of malaria, pappatacoi fever, typhus, plague, relapsing fever, trypanosomiasis and others of importance.

The library of the school is unique in containing the periodicals and books dealing with all the sciences concerned in the subject of hygiene. It contains about 35,000 volumes and still grows at a rapid pace.

Students with many different interests come from all over the world, from Great Britain, European countries, America, the British Dominions of Canada, Australia, New Zealand and South Africa; from India and Ceylon. There are a number of courses of study. The course for the Diploma in Public Health is for those seeking official office as public health administrators at home or abroad. These are instructed by all the departments in the scientific bases and practical application of the sciences in preventive medicine.

For those whose work is to be in the tropics, there is the course of study for the London Diploma or a School Certificate in Tropical Medicine and Hygiene. Another course of study is for the Diploma in Bacteriology. Medical, veterinary and biochemistry graduates are accepted for a whole year of full time study which equips them for taking full charge of a bacteriological laboratory where routine examinations and also research work are undertaken in the fields of medicine, veterinary science and industry.

Special courses in psychology and physiology are available for students who wish to take the Diploma in Psychology with special application to industry. There are likewise short courses of study in epidemiology and statistical methods and in psychology. Facilities are also given to graduates who wish to undertake research work with a view to taking a higher degree. The policy of the school has also been to give instruction to laymen who are going to the tropics, by means of short courses of lectures and demonstrations in tropical hygiene and malaria control.

Amidst all the teaching work required for these courses of study, all the scientific staff engage in active researches in their own subject for it is fully realized that research not only invigorates the teacher but also inspires the student by making him understand that no science is static but is continually growing by the addition of knowledge obtained by laboratory investigations.

It is impossible here to describe the extremely large number of research papers which have been published by members of the school staff. However, attention can be drawn to the great value of having so many scientific departments under one roof in that collaboration between the sciences becomes easier and more fruitful.

The best example of this collaboration is the study of experimental epidemics of disease in mice which was conducted by the departments of bacteriology

and statistics throughout many years prior to the war. This work, now well known throughout the world, has played an enormous part in the changes which have taken place in the attitude of clinicians and pathologists toward human infectious disease in making them realize that infections must not be considered in terms of the individual alone but must be studied in relation to the human herd or community.

The onset of war in 1939 changed the whole picture of the school's life. Many of the staff were immediately called to different parts of the country to work in wartime laboratories for the control of disease in the army, in evacuated populations and other localities where a disorganization of the health services was feared. These have played a great part in securing that high level of health of the community which has, perhaps unexpectedly, been maintained up to this sixth year of war.

Others of the staff have been fully engaged in giving their expert knowledge to advice and work for government and war departments. The usual peacetime courses of postgraduate study have stopped, largely because of the great numbers of qualified doctors needed by the armed forces in all the theaters of war. On the other hand, there have been a large number of shorter courses of study for navy, army and air force medical officers who are going abroad with the British fighting men in India, Burma and other places in the Far East, in Cyrenaica, Algeria, Tunisia and Italy, in Syria and Egypt, East and West Africa and the Pacific.

The school has also provided room for the accommodation of a number of official departments and has become a sort of center where a multitude of scientific conferences and committees are held for the decision of medical and other questions of importance to the war effort.

Firm plans for the future are impossible to formulate at the present time. But it is the intention that, after the war, the school will, more than ever before, become the center in Great Britain in which students of health will be trained and to which visitors from all countries will come for that free interchange of thoughts and knowledge without which progress for mankind is impossible.

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Supply of Students for 1946

Sources of supply of premedical and medical students for 1946 and the years immediately thereafter which may still be war years were considered by the Executive Council at a meeting held February 10th. At the moment the outlook is still bad. The only relief can come through congressional action. Congress is vitally interested in the health and welfare of the Nation. It is aware of the probable shortage of physicians for the civilian population in the next three or four years. It is not likely that many, if any, medical officers can be released from service for some time to come because of the state of the war and the need for physicians in occupied countries for which medical relief must be provided not only for the armed forces but for civilians. Therefore, the outlook for relief for us here at home is not promising.

But the immediate concern is whence will come the supply of premedical and medical students to provide a continuous flow of physicians to meet all needs, especially of civilians. There is apparently nothing to hope for from Selective Service which must induct all physically acceptable men when they reach the age of 18 years. Any student who is matriculated in a medical school and who enters on his studies in medical school before he reaches the age of 18, may be deferred. But, there will be very few of these. At present not more than 10 or 12 are now in medical schools.

Little relief can be expected to come from veterans, except, perhaps, from men in hospitals who will be discharged from service because of physical disability. All other discharged service men, or very few, can be considered for ad-

mission to medical school because of the reason for their discharge—which cannot be disclosed by the Army and the Navy without the consent of the veteran.

A.S.T.P. will not have any students to send to medical schools in 1946. The V-12 of the Navy will have only 690 men to send to medical school in 1945, about 8 men per school holding a contract with the Navy.

That leaves for consideration women and 4-Fs of whom there are now about 2,000 in medical schools of the United States. Medical schools are reporting that they anticipate that they will have about 50 per cent, certainly not more than 65 per cent, of their normal pre-war quota of students.

Because of the interest Congress is taking in health of the Nation, it is possible that it will act to remedy a condition that has a strong bearing on health. It is already rumored that Congress will do something.

It must be understood clearly that medical schools are not viewing the situation from the standpoint of loss of fees but solely from the standpoint of whence will come the needed supply of physicians for civilians. If the accelerated program of instruction continues for the next three years, and it seems likely that it will, there will be a very small graduating class in 1949; perhaps none in 1950. Surely the annual death rate among physicians will overshadow completely the supply of new graduates for replacements. With a continuing increase in population, there is urgent need for studying this whole problem carefully. Should a redistribution of physicians be made? In areas in which the physician-population ratio is low, it

may be necessary to devise some method whereby physicians in these areas can be induced to enter practice in an area where the physician-population ratio is high or where there is not any ratio at all because there are not any physicians in that area. There are many such areas now. Many small towns are without a physician, despite the fact that they can support one. There is need for serious thought if this problem is to be solved satisfactorily.

♦ ♦

Small Town Medical Practice

It is becoming increasingly difficult to persuade a young graduate to enter practice in a small town. All his training has inculcated firmly in his mind that it is not possible to practice medicine without all the facilities which populous areas afford. Perhaps, medical schools are responsible for that attitude. They have not done much, if anything, to develop in the student a strong spirit of self-reliance, the feeling that he can practice good medicine in keeping with present day standards by depending solely on himself. There are many practitioners in very small communities who are doing an excellent job. They are well equipped; they are competent; self-reliant—as they must be if far removed from a fellow practitioner. They have an X-ray apparatus; an electrocardiograph; a metabolimeter; a well equipped clinical laboratory. True, they must be able to make good use of all this and they are. They must depend on such help, if needed, as they can secure in the community,—an ex-nurse; the druggist, any one with sufficient intelligence and willingness to be helpful. The life is not an easy one, but the financial returns are good, often much better than are those of a young practitioner in a large city. And, there is the satisfaction of doing a good job where it is needed.

In order to give the medical student an insight into what such a practice is, would it not be a good plan to give every senior student one month of experience with a carefully chosen practitioner in a small community? Such an experience should go far to convince the stu-

dent that a small practice is a good practice. And it would go far to bring about a more equitable distribution of physicians on the basis of actual need for medical service. It is not unusual to see a small, well equipped hospital of ten or fifteen beds in a community of less than 300 people. People are ready and willing to help set up a small hospital if they are convinced that the physician can make the right use of it. It can be done. It has been done in many places. Graduates know little, if anything, about the possibilities of practice in a small community. They do not have opportunity to find out what it is. They work in hospitals; meet only city practitioners; get the feeling and conviction that it is not possible to practice without all the facilities they see and use day after day, including the nearness of fellow practitioners. Assigning them to a country practitioner of proved worth for one month will give them the other side of the picture and this may induce them to practice in a small community. Without that experience, the thought of being alone, with the nearest practitioner 50 or more miles away, is appalling. Self-reliance, independence, strength of will and character can and must be developed in medical students if some, at least, of the problems besetting medical practice today are to be solved.

♦ ♦

Again the Internship

At a meeting of the Committee on Internships of the Association of American Medical Colleges with representatives from the three hospital associations, the recommendation approved at the annual meeting of the Association that medical schools will not make recommendations or give out credits to complete an application for an internship until the student has completed the work of the junior year, was concurred in with the understanding that so far as the hospital associations are concerned, this matter must be submitted to them for approval. The representatives of these associations did approve of the recommendation.

It was also agreed that hospitals be requested not to consider an application for internship unless the applicant has completed the work of the junior year; that every applicant be given ten days in which to accept or reject a proffered internship. As the matter stands now, he often is required to do this within twenty-four hours which leads to breach of contract later if he receives a more desirable offer from another hospital, perhaps his first choice.

In the interests of uniformity, it was agreed that a uniform application blank should be prepared. A committee was appointed to prepare such a blank. It will be submitted to the hospitals and colleges for approval.

It is to be desired that these actions will eventually lead to a solution of most, perhaps all, the problems which beset the internship now. It is possible. The medical schools are ready. Many of them are living up to the recommendation passed at the annual meeting of the Association. Unfortunately, a student can apply for an internship as he chooses, when he chooses. He may have the appointment when he enters medical school. It is up to the hospitals to make these recommendations effective. If they want good interns, they should cooperate. If they merely want interns, then they will not cooperate. The status of a hospital as a teaching institution will enter into the picture to a considerable degree. These hospitals can easily cooperate in

this program and they will be assured of getting good interns.

* * *

Analysis of Medical Students in Their Relation to Selective Service

At the request of the Director of the Selective Service System, Major General Lewis B. Hershey, a questionnaire was sent to every approved medical college in the United States in order to ascertain the status of every medical student in relation to Selective Service.

Seventy-eight schools reported as follows: Freshmen, 6,399; sophomores, 5,947; juniors, 5,562; seniors, 5,947; total number of students, 23,665. The draft status of these students is: Women, 1,325; members of A.S.T.P., 11,217; members of Navy-V-12, 6,455; Class I-C (not in A.S.T.P. or V-12), 694; Class II-A, 2,491; Class IV-F, 723; all others, 760. Hence, 75 per cent of all students came through Army and Navy channels; less than 9 per cent are women and 4-Fs. Deducting these figures from the total number of students leaves 4,000 students to come from all other sources. At this time, there does not seem to be any prospect of getting these 4,000. If I-Cs and II-As, plus "others" will be available in the same numbers as they are represented in present classes, they would almost make up the 4,000 needed to bring all classes up to the normal quota. It must be noted, however, that the present freshman classes are less in number, by about 260 students, than they were in the preceding academic year.

THE ELLENDER BILL

As we go to press, word is received that Senator Ellender of Louisiana has introduced a bill in Congress—S. 637—"to authorize the release of persons from military service and the deferment of persons from military service, in order to aid in making possible the education and training of physicians and dentists to meet essential needs."

"(2) (A) The number of men enrolled in the program for the purpose of permitting them to pursue second year premedical education and training shall not exceed eight thousand at any one time prior to the end of the third month of the academic year and shall not exceed four thousand five hundred at any one time after the end of the third month of the academic year, and after the third month shall not include any one who has not been accepted by admission to the earliest subsequent entering class of an accredited medical school following the satisfactory completion of such second-year premedical education and training."

College News

University of Minnesota Medical School

On January 18 William C. Rose, Ph.D., professor of biochemistry, University of Illinois, Urbana, Ill., delivered the Elias Potter Lyon Lecture at the University of Minnesota Medical School, Minneapolis. His subject was, "The Amino Acid Requirements of Man."

The J. B. Johnston lectureship in neurology has been created from a gift from Dr. Johnston's widow, Mrs. J. B. Johnston, Los Altos, Calif. The lectureship is named to honor John B. Johnston, Ph.D., who served as professor of comparative neurology in the medical school from 1908 to 1915 and dean of the College of Science, Literature and the Arts from 1914 to 1937. It is planned to invite to the medical school annually a prominent neurologist to present the lecture. Announcement is also made of the new Leo G. Rigler lectureship in radiology endowed by a group of friends and colleagues of Dr. Rigler, professor and head of the department of radiology, in recognition of his contributions to the teaching and practice of medicine, particularly in the field of radiology.

In the recent final distribution of the assets of the Citizens Aid Society, Minneapolis, the trustees set aside funds totaling about \$16,000 to complete several research projects of the Medical School, which they had agreed to support. In addition the trustees set up a fund to provide \$12,000 annually for a period of ten years for the support of the Cancer Institute at the university. The Citizens Aid Society has for thirty years been supporting various cultural, educational and welfare activities in Minneapolis. Cancer has been one of the special interests of the society since 1924, when the trustees provided funds to construct the Cancer Institute addition to the University Hospital. The

institute is a memorial to Mr. George Chase Christian, the son of Mr. Henry Christian, who established and endowed the Citizens Aid Society. Mrs. George Chase Christian is president.

The regents of the University of Minnesota changed the status of the department of preventive medicine and public health to the School of Public Health. The change was made to give proper recognition to a department which has been for a number of years offering professional training in public health for physicians, engineers and nurses and more recently for health educators. The School of Public Health will continue to function as an integral part of the medical school and the university Division of Medical Sciences. A building program planned at the university eventually will include a separate unit for the School of Public Health. Dr. Gaylord W. Anderson, professor and head of the department of preventive medicine and public health, on leave of absence as lieutenant colonel, medical corps, Army of the United States, and chief of the division of medical intelligence, Office of the Surgeon General, has been named director of the new School of Public Health. Dr. Haven Emerson, New York, returned to the medical school as visiting professor of public health to serve for the year 1945.

The regents of the University of Minnesota Medical School, Minneapolis, recently gave unanimous approval to an agreement which creates the "Frederick B. Wells Jr. Trust Fund," the purpose of which will be to support the investigation and better treatment of dementia precox and allied conditions. The income from the fund will be paid the university in perpetuity in the amount of approximately \$2,400 annually; expenditures are to be made at the discretion of Dr. Harold S. Diehl, dean of the medical school, and the head of the department of neuropsychiatry.

A group of professional friends and former patients of the late Dr. Ernest L. Meland are contributing to a fund to create a memorial in his honor, which will probably take the form of a fellowship or research project in urology at the University of Minnesota Medical School. A temporary committee is in charge of collecting the fund and will turn the money over to the Minnesota Medical Foundation, a perpetual, charity trust, with the recommendation for the end to which it might be used.

* *

Long Island College of Medicine

Gifts and grants totaling \$127,374.15 were received in the year ending January 1, 1945, for nine research projects, new college laboratory facilities, scholarships, student aid, and a library for the new William Alanson White Clinic.

Contributions through the Development Fund still in progress, comprised the largest single item on the report with a total in gifts secured up to January 1, 1945, of \$63,784.05. This fund was used to provide new laboratories for the departments of medicine, anatomy, biochemistry and radiology, for which extensive structural alterations have been made in the Polhemus Memorial Building, the Hoagland Laboratory Building and the Polak Laboratory. The second largest item was a continuation of the six year grant from the Commonwealth Fund which gave \$16,890.83 for the development of the new department of psychiatry and named after Dr. William Alanson White, graduate of the college, class of 1891, who as director of St. Elizabeth's Hospital in Washington, D. C., was for many years one of the national leaders in psychiatry. The initial grant for this department was made in 1943 for a sum of \$5,112.50.

An anonymous contribution of \$2,500 was made for the library of this new psychiatric clinic. Another anonymous contribution of \$4,900 was made to install new laboratory and library facilities in the college division at Kings County Hospital. When completed this

whole project will cost \$10,000 with the balance to come out of Development Fund contributions.

A new endowed scholarship, amounting to \$5,350, was established in the name of Mrs. Sarah Beinfeld Messing, whose son is a graduate of the college and whose grandson is a member of the present senior class. The college now has three endowed scholarships, the Stanley P. Jadwin Scholarship, the Peter Yudkowsky Memorial Scholarship, both established a year ago, and the Sarah Beinfeld Messing Scholarship, for which Mrs. Messing contributed \$5,000 and members of her family \$350. Contributions for scholarships from the Student Activities Fund amounted to \$1,280 in 1944. The Jewish Hospital continued its scholarship of \$350.

A new prize award was established in 1944 by the late Mrs. Joseph Howard Raymond with a gift of \$995 in memory of the late Dr. Joseph Howard Raymond, secretary of the faculty from 1888 to 1915, and professor of physiology from 1873 to 1915. The Joseph Howard Raymond Prize in Physiology is the twelfth of the prize awards given annually by the Long Island College of Medicine to members of the graduating class who have made outstanding records in different phases of medicine.

A sum of \$500 was added to the prize award established in 1943 through the gift of \$1,000 in memory of Robert R. Benedict, Jr. The income from the \$1,500 now constituting the gift will be used for a prize to be awarded each year to the member of the graduating class presenting the best thesis or study on a psychiatric problem.

The Committee of the Louis Livingston Seaman Fund provided \$400 for a research project in the department of preventive medicine, and the Brooklyn Tuberculosis and Health Association made a contribution of \$1,000.

Three grants were made direct to Dr. James B. Hamilton, head of the department of anatomy, who is continuing work he began when he was associate professor of anatomy at the University of Missouri

School of Medicine. These grants are, \$2,000 from the Harris McLaughlin Fund, \$692.85 from the International Cancer Research Foundation, and \$2,957.29 from the Ciba Pharmaceutical Products Corporation.

Commercial firms made grants for special studies as follows: American Home Products, for a Pediatrics Fellowship, \$2,000; The Aviation Packaging Company and Eicor, Inc., \$1,000 each for a special phase of the development program; Lehn and Fink, Inc., \$1,500 for a study of new antiseptics in the Department of Bacteriology; the Maltine Company, \$4,250 for clinical investigations in the Department of Surgery; E. R. Squibb and Sons, \$2,000 for a continuation of the study on lymphogranuloma venereum in the Department of Dermatology; William R. Warner and Company, Inc., \$2,000 for graduate study in the Department of Radiology; and the Winthrop Chemical Company, \$900 for pneumonia research in the Department of Medicine.

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Woman's Medical College of Pennsylvania

The Woman's Medical College of Pennsylvania held its ninety-third annual commencement on January 10th at the College of Physicians of Philadelphia. Degrees were conferred on twenty-nine graduates by the Honorable Herbert F. Goodrich, LL.B., LL.D., President and Chairman of the Board of Corporators of the Woman's Medical College. Of the nineteen living members of the Class of 1895, six were present to receive the Fifty-year Medal awarded by the Alumnae Association to the members of the class. Dr. Dean A. Clark, senior surgeon, United States Public Health Service, delivered the Commencement Address, "Trends in Medical Practice."

The speakers at the luncheon which followed the Commencement Exercises were Dr. Marion Fay, Acting Dean of the Woman's Medical College, and Dr. William Harvey Perkins, Dean of the Jefferson Medical College of Philadelphia.

A series of graduate lectures sponsored by the college included a talk by Dr. William D. Stroud on coronary disease and one on digitalis therapy. Drs. Samuel Bellet and William G. Leaman, Jr., discussed recent trends in the treatment of cardiovascular disease. Others in the series include: Dr. Leandro M. Tocantins, "Recent Advances in Hematology," January 3; Dr. Edward Weiss, "Recent Advances in Our Knowledge of Kidney Disease," January 17; Dr. Weiss, "Practical Aspects of Essential Hypertension," January 31.

Special ceremonies were held November 29 to mark the unveiling of a portrait of the late Dr. Hannah T. Croasdale, presented to the Woman's Medical College of Pennsylvania by Miss Marjorie Trump and Mr. Charles Croasdale Trump, granddaughter and grandson, respectively, of the physician. Dr. Croasdale was said to be the first woman physician to occupy a chair of gynecology, serving the Woman's Medical College of Pennsylvania, where she graduated in 1880, as instructor in the department of surgery from 1875 to 1879 and professor of gynecology from 1880 to 1902, when she became emeritus professor. Among the speakers at the ceremonies were Dr. Catherine Macfarlane, professor of gynecology, who worked with Dr. Croasdale first as a student and then as an intern, and Rachel Bulley Trump (Mrs. Charles C. Trump), the artist who executed the portrait.

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University of Chicago Medical School

Among the recent changes in the Division of Biological Sciences, including the University of Chicago School of Medicine, are the appointment of Dr. William H. Taliaferro, Eliakim Hastings Moore distinguished service professor of parasitology, as adviser to the president in the biological sciences. The deanship vacated by Dr. Taliaferro has been assumed by Roland W. Harrison, Ph.D., professor of bacteriology, who has been acting dean of the Division of Biological Sciences. Dr. Arthur C. Bach-

meyer will continue as associate dean of the division and director of the university clinics, spending part time until 1946 as director of study for the Commission on Hospital Care. *Science* reports that Dr. Basil C. H. Harvey, acting dean of students of the division, including the school of medicine, during the past year, has retired. F. Joseph Mullin, Ph.D., assistant professor of physiology, has been appointed assistant dean of students, pending the appointment of a dean.

The official key of the Alumni Association of the School of Medicine, recently adopted by action of the executive committee, is an adaptation of a key formerly presented to residents of Billings Hospital. The front entrance of Billings in cameo is on the presenting surface, and the reverse side bears the seal of the University of Chicago, the words "School of Medicine" and the engraved initials and graduation date.

A faculty committee on internships has been appointed to assist students in obtaining internships and residencies. Dr. Arthur C. Bachmeyer, chairman, F. Joseph Mullin, Ph.D., secretary, and Drs. Emet B. Bay, Hilger P. Jenkins, Francis Howell Wright and J. Robert Willson are members of the committee. The facilities of the Medical Alumni Association will be at the disposal of the committee, and Dr. Bay will act as intermediary between the association and the faculty committee. It is expected that the members of the association on staffs of hospitals in various parts of the country will be called on to assist in securing appointments for University of Chicago students to the best advantage of both the student and the hospital.

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*University of Virginia
Department of Medicine*

Dr. Stephen H. Watts, former professor of surgery, has added a gift of \$5,000 to an earlier gift of \$15,000 for a Book Fund for the Medical Library. A gift of \$500 has been received from Dr. Francis McGovern of Danville, Virginia, for the purchase of books in the fields of ophthalmology and otolaryngology for the Medical Library.

Dr. Hugh Paige Newbill, assistant professor of neurology and psychiatry, has been elected a member of the Board of Directors of the Virginia Society for Crippled Children and Physically Handicapped Adults. The Board of Directors of this society has given Dr. Newbill a grant of \$2,500 in support of his work in the Convulsive Disorder Clinic at the University of Virginia Hospital.

Dr. D. C. Smith, professor of dermatology and syphilology, reports that the Squibb Institute for Medical Research has extended their grant for the fellowship here to study the use of clorarsen in syphilis to January 15, 1946. The sum appropriated annually is \$1,200.

Dr. Oscar Swineford, professor of the practice of medicine, has been working since March, 1944, under a grant of \$1,000 from Wyeth and Company. As a part of this work he read a paper at the American Academy of Allergy meeting in New York on December 11, 1944, entitled "Reaction to Anti-Pneumococcus Rabbit Serum, the Role of Reversed Passive Anaphylaxis and of Inherent Toxicity of Antiserum, Failure of Heat to Separate Sensitizing from Therapeutic Antibody: An Experimental and Clinical Study." At this meeting Dr. Swineford was elected President of the American Academy of Allergy.

The Alpha Eta Chapter of Phi Beta Pi presented Dr. Roscoe R. Spencer, Chief of the National Cancer Institute, in its annual lecture at the Medical School on January 15, 1945. Dr. Spencer's subject was "Problems of Cancer Biology."

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*University of Wisconsin
Medical School*

The school announces plans for refresher courses and postgraduate training for physicians returning from service and for those in civilian practice. Four plans have been set up: a refresher course of twelve weeks' duration, a two to six month course for specialists, residencies, and basic science training. The refresher course for general practitioners covers medicine, neurology and psychiatry, pediatrics, general surgery and al-

lied specialties and obstetrics and gynecology. The course for specialists is open only to those who have already had training in their specialty and is designed as a review and refresher course in the various specialties. The division for residencies is for those who wish to acquire specialty training for certification; three year residencies in all of the specialties will be available. It is the plan to increase the number of residencies from a prewar number of approximately forty to approximately sixty. As in the past, in basic science training the preclinical departments are open to properly qualified men and women who wish to work for one year or more on any project in which they are interested.

Col. William S. Middleton, M. C., dean, was designated as the recipient of the alumni award of merit from the general alumni society of the University of Pennsylvania School of Medicine, Philadelphia. The award was conferred in absentia during the founder's day exercise. Colonel Middleton is on military leave from the University of Wisconsin and is supervising activities in internal medicine of the American forces in Europe, it is reported.

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Western Reserve University School of Medicine

With gifts of about \$15,000, a new cancer research project will be launched to investigate the curative properties of a serum evolved by Dr. Alexander A. Bogomolets, director of the institute of experimental biology and pathology in the Soviet Union. The work will be carried out under the direction of Dr. Harry Goldblatt, associate director of the institute of pathology at the medical school, who, with Enrique E. Ecker, Ph.D., professor of immunology, has been interested in the serum. Of the funds, \$4,000 has been obtained from the Herbert Jules Goodman Foundation created by Mr. and Mrs. Harry Kirtz and Mr. and Mrs. Jules A. Goodman of Cleveland. Herbert Jules Goodman, Mrs. Kirtz's only child, died of cancer on Feb. 4, 1944. To the fund for this

work, initiated by the Herbert Jules Goodman Foundation, the Elizabeth Severance Prentiss Foundation has added \$4,000, the Field Army of the American Cancer Society is donating \$3,000, the Cleveland Foundation \$1,000 and the Louis D. Beaumont Trust \$1,000. The Field Army plans to raise \$2,000 more.

The Commonwealth Fund of New York has allocated \$32,600 to assist Enrique E. Ecker, Ph.D., professor of immunology, Western Reserve University School of Medicine, Cleveland, and the Institute of Pathology, to continue his work for two more years on the "chemical factors involved in the resistance to disease." The grant will enable Dr. Ecker to add a physical chemist to his staff.

Dr. Joseph T. Wearn, professor of medicine, has been appointed dean, succeeding Dr. Torald Sollmann, retired.

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University of Nebraska College of Medicine

Under the auspices of the C. W. M. Poynter Foundation of the College of Medicine, University of Nebraska, an oil portrait of Dr. Poynter, Dean of the college since 1929, was presented formally to the University on February 14th. At this time announcement was made of the Poynter Fellowship in the Medical Sciences, also sponsored by the Foundation. Following the presentation there was an informal reception honoring Dr. and Mrs. Poynter. The stipend of the recipient of this fellowship is \$1,200.00 for a period of tenure of ten months, during which time he will be expected to devote his entire time to research under direction of any of the preclinical or preclinical and clinical departments of the college. Applicants should have concluded at least the first two years of medicine and have demonstrated exceptional ability and, in the opinion of the Fellowship Committee, indicate aptitude for advanced study and investigative work in the medical sciences. Should he so desire, the recipient may become a candidate for an advanced degree in the medical sciences under the

current rules of the Graduate College.

Applications for the next academic year should be sent to Dr. A. Ross McIntyre, Chairman of the Fellowship Committee, or the Secretary of the Foundation, Dr. John S. Latta, College of Medicine, University of Nebraska, Omaha 5, Nebraska.

Dr. Elliott P. Joslin, professor emeritus of clinical medicine, Harvard Medical School, Boston, delivered the annual address before the Alpha Omega Alpha chapter of the college, Omaha, January 18, on "Diabetes Today."

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University of Texas School of Medicine

Dr. James Greenwood, Jr., has donated a considerable fund for the establishment of the James Greenwood Lectureship in neurology and neurosurgery, in honor of his father. The lectureship will provide for meetings both at the Baylor Medical College in Houston and at the University of Texas School of Medicine in Galveston.

The National Live Stock and Meat Board of Chicago donated \$7,200 for the support of work in fat metabolism under the direction of Dr. Arild E. Hansen, professor of pediatrics and director of the Child Health Program. The work of the Child Health Program is supported by the William Buchanan Foundation of Texarkana.

A grant of \$1,800 has been made by the Abbott Laboratories to the department of internal medicine to support research work of Dr. Charles T. Stone, professor of medicine.

Dr. Antonio G. Ochoa, mycologist of the Institute of Tropical Medicine, Mexico City, was a recent visitor for special conferences on tissue culture and fungus diseases.

The John and Mary R. Markle Foundation has made a grant of \$3,300 for the support of studies on filariasis to be made by Dr. J. Allen Scott, associate professor of epidemiology and preventive medicine. The Markle Foundation has also given a grant of \$2,500 to support the work of Dr. Eric Ogden, professor

of physiology, on blood flow and hypertension.

Dr. Chester N. Frazier, professor of dermatology, has been appointed Civilian Consultant to the Surgeon General in the field of dermatology. Dr. Frazier acquired considerable experience in this field during the many years he lived in China where he was head of the division of dermatology at Peiping Union Medical College from 1922 to 1943.

Dr. J. A. Barger of the Mayo Clinic spoke on "Modern Concepts of Intestinal Infection" February 26. Doctor Barger's lecture was under the auspices of the Phi Chi Medical Fraternity.

The annual Phi Beta Pi Medical Lecture was given by Dr. Walter Alvarez of the Mayo Clinic March 2nd. Doctor Alvarez spoke on "Nervous Indigestion."

The University of Texas Child Health Program under the direction of Dr. Arild Hansen of the Department of Pediatrics, presented, in cooperation with the Texas Section of the American Academy of Pediatrics, the Texas Pediatric Society, the Texas Society for Mental Hygiene, the Hogg Foundation of the University of Texas, and the Children's Division of the State Department of Public Welfare, a Pediatric Conference on psychologic and psychiatric problems in children March 9th. The guest speakers were Dr. James S. Plant, Director of the Essex County Juvenile Clinic, Newark, New Jersey; Dr. Milton E. Kirkpatrick, Director of the Guidance Center of New Orleans, and Dr. John H. Waterman, Director of the Guidance Center of Houston.

The William Buchanan Lecture was delivered March 5th by Dr. James S. Plant, Director of the Essex County Juvenile Clinic, Newark, New Jersey. Doctor Plant discussed the principles of management of psychologic problems in children.

A special series of seminars on the structural units of the nervous system were presented by members of the Anatomy Laboratory on Wednesday afternoons through March.

*University of Utah
School of Medicine*

Dr. A. Cyril Callister has resigned the deanship effective February 1, 1945. His successor has not yet been appointed.

Dr. Hans Hecht, formerly instructor in medicine at Wayne University College of Medicine, has been appointed instructor in medicine.

Dr. James E. P. Toman, instructor in physiology at the University of Vermont, has been appointed assistant professor of physiology. Dr. Mark Nickerson, of the Johns Hopkins University Department of Zoology, has been appointed research assistant (rank of instructor) in the department of pharmacology. Corinne Manuel has been appointed research assistant in the department of pharmacology.

Abbott Laboratories, North Chicago, Illinois, has made an additional grant of \$1,500 to Louis S. Goodman, professor of pharmacology, for the study of new anticonvulsants and analgesic compounds.

The Givaudan-Delawanna, Inc., New York, N. Y., has made a grant of \$16,000 to Dr. Louis S. Goodman to be expended over a period of two years for the purpose of investigating a large series of new organic compounds for their pharmacodynamic properties and therapeutic actions.

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*University of Illinois
College of Medicine*

The fifth semi-annual refresher course in laryngology, rhinology and otology will be conducted March 26 to 31, inclusive. While the course will be largely didactic, some clinical instruction will be included. This course is intended primarily for ear, nose and throat specialists. As the registration is limited to thirty, applications will be considered in the order in which they are received. The fee is \$50.00. When writing for application, please give details concerning school and year of graduation, and past training and experience. Address: Dr. A. R. Hollender, Chairman, Refresher Course

Committee, Department of Otolaryngology, University of Illinois, College of Medicine, 1853 West Polk Street, Chicago 12, Illinois.

The College of Medicine received a grant of \$23,000 from the Field Foundation for a study in allergy and an anonymous gift of \$20,000 for visual aid studies.

Dr. George E. Wakerlin, professor and head of the department of physiology, lectured on hypertension at the Student Union Building February 2. The lecture was under the auspices of the Phi Delta Epsilon Fraternity.

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Southwestern Medical College

The Wm. S. Merrell Company has given a grant of \$4,000 to Drs. Tinsley Harrison and Donald Slaughter to study the action of bronchodilator drugs.

Eli Lilly and Company has made a grant of \$2,500 to Dr. Donald Slaughter. This will be used to study aspergillic acid and other antibiotics in the department of pharmacology by Dr. A. Goth, assistant professor of pharmacology.

Dr. Eric Ogden, professor of physiology at the University of Texas Medical Branch, delivered the Sigma Xi lecture under the auspices of the Southwestern Medical College on January 27, 1945, in Dallas.

The Rose Lampert Graff Foundation of Los Angeles, California, made a grant of \$500 to Dr. S. Edward Sulkin, associate professor of bacteriology and immunology. This will be used for studies on neurotropic viruses.

Lewis Waters, chairman of the Department of Visual Education, announces a recent gift made by the Variety Club of Dallas of \$10,000 worth of 16 millimeter sound and color motion picture equipment. This equipment will be used by this department for the production of medical and scientific motion pictures for teaching purposes and extension education. This program anticipates the decided impetus now being given to post war medical teaching through the use of films.

*Temple University
School of Medicine*

The John and Mary R. Markle Foundation has recently given the following grants: A grant of \$3,000 for a study of experimental cerebral concussion. This work is to be carried on by Drs. Ernest A. Spiegel and Mona Spiegel-Adolf. A grant of \$3,000 for a study of the effectiveness of alkali therapy in the states of acidosis of varying severity. This work to be carried on by Dr. Waldo E. Nelson. A grant of \$1,560 for a study of the etiology of cataract in riboflavin deficiency. This work to be carried on by William M. Hart, Ph.D.

In addition Temple University Hospital has received from the estate of John Edward Wells, deceased, \$11,943.44 in memory of his wife's father, the late Dr. Edmund Wales Holmes. Dr. Holmes was the first surgeon at the Temple University Hospital from 1893 until 1903 and was also the first professor of surgery in the university medical school.

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*University of Rochester
School of Medicine*

The establishment of a neuropsychiatric clinic has been made possible by a gift of securities to the university by Mrs. Helen W. Rivas of New York City and Le Roy, N. Y. Of the total gift a portion is designated for construction and equipment of a building to house the clinic as a unit of the School of Medicine and of Strong Memorial Hospital. A trust fund has been set up to operate and maintain the clinic. The new unit will be constructed as soon as can be practicable in view of present building conditions. In the meantime a committee of the medical school faculty will survey the field throughout the country to select a man to head the clinic so that he may participate in preparing the plans for the physical plant and the staff organization. It is contemplated that the clinic will be used for the study and care of persons having functional nervous disorders rather than for those

with extreme mental ailments. Provision will be made for ample laboratory space for active research and investigation. It is planned to have beds for from 50 to 60 inpatients, and extensive use of the clinic for ambulatory patients is anticipated. Income from the endowment fund set up for the clinic will be paid to the university and accumulated to finance the project.

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*Yale University
School of Medicine*

Yale Medical School offers a Graduate Course in Developmental Diagnosis from one to two months duration by arrangement with the Yale Clinic of Child Development. The course (fee \$100 to \$200) deals with methods of behavior examination of infants and young children; clinical applications to neurological and developmental conditions; conferences on cases observed in the outpatient services; cinema clinics and intensive study of diagnostic norms of development.

Open to a limited number of qualified physicians. Apply to Dr. Arnold Gesell, Director, Clinic of Child Development, School of Medicine, 14 Davenport Avenue, New Haven, Conn.

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*University of Oklahoma
School of Medicine*

Students under the sponsorship of the recently organized student council recently published the first issue of the *Student Newspaper*, of which Mark R. Johnson, a member of the junior class, is editor. Plans are under way by the students in the medical school to publish the first yearbook in the form of a medical school annual to be devoted entirely to the medical school. The book will consist of approximately seventy-five pages and will contain pictures of the faculty, students, buildings, student activities, a complete alumni directory and other items of interest. The publication of this annual is also sponsored by the student council.

*Stanford University
School of Medicine*

Faculty changes: Capt. Philip K. Gilman (MC), on leave of absence with the Navy, to clinical professor of surgery emeritus; Dr. George W. Hartman to assistant clinical professor of surgery (genitourinary) emeritus; Dr. Mary I. Preston to assistant clinical professor of pediatrics emeritus; Dr. C. Frederic Fluhmann to associate clinical professor of obstetrics and gynecology.

Dr. Wei Chang Chu, instructor in pharmacology, Kweiyang Medical College, arrived in San Francisco on leave for two years from the Chunking government for work in the department of pharmacology.

The sixty-third course of Popular Medical Lectures will be delivered March 2, 16, 30 and April 13, 1945, in Lane Hall. The subjects and the speakers are as follows: March 2: "Mental Disturbances in Relation to the War," Dr. Karl M. Bowman; March 16: "Medical Services to the Armed Forces," Brigadier General Charles C. Hillman, M.C., U. S. Army; March 30: "Penicillin," Dr. Lowell A. Rantz; April 13: "The Rh Factor in Marriage and Childbearing," Dr. T. Henshaw Kelly. All interested are cordially invited to attend.

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*University of Arkansas
School of Medicine*

The following research grants have been received: (1) From the Eli Lilly Company \$1,500.00 to assist Dr. R. H. Rigdon, professor of pathology, in his studies on malaria. This is especially for the work Dr. D. E. Fletcher, instructor in the department, is doing on the pathology of the nervous system in malaria. (2) From the John and Mary R. Markle Foundation \$2,500.00 to assist Dr. Rigdon in his work on anoxia in malaria.

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*University of Tennessee
College of Medicine*

John P. Quigley, Ph.D., a member of the staff of Western Reserve University School of Medicine since 1929 and pro-

fessor of gastrointestinal physiology since 1943, has accepted an appointment as professor of pharmacology and chief of the division.

Dr. Frank E. Whitacre has been appointed associate professor of obstetrics and gynecology, effective January 1. He has been given a full time appointment. Dr. Whitacre formerly was instructor in obstetrics of a postgraduate committee at Tennessee, later going to Peiping Union Medical College, Pekin.

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*Indiana University
School of Medicine*

A lectureship has been established by Phi Delta Upsilon in memory of the late Dr. John Finch Barnhill, for many years connected with the university in the department of otolaryngology and head surgery. A plaque will be hung in the medical school on which will be placed each year the name of the freshman medical student who has done the most outstanding work in anatomy. The name of Maurice A. Turner, Indianapolis, a freshman student of last year, is the first name to be placed on the plaque.

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*University of Kansas
School of Medicine*

Dr. Warren H. Cole, professor and head of the department of surgery, University of Illinois College of Medicine, Chicago, delivered the tenth annual lecture under the Arthur H. Hertzler Lectureship January 10. His subject was "Chronic Cystic Mastitis." In 1935 Alpha Upsilon of Phi Beta Pi established the Arthur E. Hertzler Lectureship in honor of Dr. Hertzler, Halstead. The lectureship is entirely supported by contributions of current active members of the fraternity.

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*Columbia University
College of Physicians and Surgeons*

A grant of \$14,500 has been received from the Commonwealth Fund of New York to be applied to the study of respiratory physiology in the department of medicine.

Columbia announces that it will conduct research on the process of growing old. The study, which will be carried on by the department of pathology, will be financed by a grant of \$30,000 from the Albert and Mary Lasker Foundation, designated as the Wendell Willkie Memorial Grant, and \$85,000 contributed by the Josiah Macy Jr. Foundation.

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Emory University
School of Medicine

Dr. Sidney C. Madden, associate professor of pathology, University of Rochester School of Medicine and Dentistry, Rochester, has accepted a position as professor of pathology and head of the department. The appointment fills the vacancy that occurred when Dr. Roy R. Kracke left Emory to become dean of the University of Alabama School of Medicine, Birmingham.

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St. Louis University
School of Medicine

The Lambda chapter of Phi Beta Pi has established a lectureship in honor of Dr. John Auer, professor and director of the department of pharmacology. The first lecture was given by Dr. Warfield T. Longcope, professor of medicine at Johns Hopkins University School of Medicine, Baltimore, on "Allergic and Toxic Reactions of the Sulfonamide Drugs."

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Medical College of Virginia

Dr. Robert W. Ramsey joined the faculty September 1, 1944, as associate professor of physiology. In the January issue of the JOURNAL it was stated that Dr. Ramsey had joined the faculty of the University of Oregon Medical School. This was an error.

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Cornell University
Medical College

The Rockefeller Foundation has given a grant to Cornell University Medical College and the New York Hospital to establish the J. Whitridge Williams Assistantships in obstetrics and gynecology.

The positions are specifically designed for postwar training of a selective group that military service has deprived of advanced training comparable to that possible in the prewar period, according to *Science*.

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New York University
College of Medicine

Dr. L. Everard Napier, formerly director of the School of Tropical Medicine of Calcutta, India, served as visiting professor of tropical medicine for January and February, 1945. This was made possible by a grant received from the Commonwealth Fund. Doctor Napier gave several special lectures to the faculty and student body, and held conferences with students.

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Vanderbilt University
School of Medicine

Colonel John B. Youmans, MC., has resumed his duties as Director of the Nutrition Division, Preventive Medicine Service, Office of the Surgeon General, after a tour of duty in China. He was engaged in a study on the nutrition of Chinese troops in the course of which he covered 1,500 miles of central China and examined 1,000 troops.

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West Virginia University
School of Medicine

The State Legislature is considering whether funds will be provided to continue the arrangement with the Medical College of Virginia for the enrollment of graduates of the school for the third and fourth years of medicine at that institution.

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University of Vermont
College of Medicine

Ferdinand J. M. Sichel, Ph.D., associate professor of physiology, has been promoted to professor of physiology and named chairman of the department of pharmacology and physiology effective January 1.

*Medical College of the
State of South Carolina*

At a special meeting of the council of the South Carolina Medical Association recently approval was given to the proposed expansion program for the Medical College of the State of South Carolina, Charleston. The council went on record in offering its full support to the board of trustees of the college to attain this objective. The state institution proposes, among other things, to extend its clinical teaching facilities and to establish a clinical center for reference of problem cases from physicians throughout the state. A hospital included in the general setup would be not just a general hospital, but would be a teaching, diagnostic and research clinic. The service would be on a statewide basis and not competitive with private practitioners or other hospitals. The patients would be referred by private physicians but would remain private patients of the doctors who sent them.

Dr. Foster N. Martin of the department of pharmacology has resigned to accept a position at Tulane. Dr. Max D. Wheatley has resigned as instructor in anatomy to join the department of anatomy in the University of South Dakota School of Medicine. Dr. B. U. McCown has been appointed assistant in pathology.

*Georgetown University
School of Medicine*

Ground was broken December 18 for the new Georgetown University Hospital, which is expected to be completed in January, 1946. The building will contain 400 beds and be constructed at a cost of \$2,420,000. The Federal Works Agency has allotted \$1,820,000 toward the cost.

*Louisiana State University
School of Medicine*

Dr. Clyde Brooks, professor of pharmacology and experimental therapeutics, has resigned to accept the deanship of Essex College of Medicine and Surgery.

*University of Toronto
Faculty of Medicine*

Cody Gold Medal, K. F. Clute; Cody Silver Medal, J. V. Basmajian and H. Kalant; William John Hendry Memorial Scholarship in Obstetrics and Gynecology, H. Kalant; Chappell Prize in Clinical Medicine, K. F. Clute; Ontario Medical Association Prize in Hygiene and Preventive Medicine, W. R. Harris; Dr. Roy Simpson Scholarship in Pediatrics, Miss E. V. Duggan; David Dunlap Memorial Scholarship, Sixth Year, H. O. Barber.

*Northwestern University
Medical School*

A professorship in pathology is one of four new professorships in honor of the late Mrs. Emma H. Morrison who willed \$1,750,000 to the University to create the "Charles E. and Emma H. Morrison Memorial Fund" to use as is deemed best. The other professorships will include one each in zoology, English and marketing.

*Cornell University
Medical College*

Dr. Edwin C. Andrus, associate professor of medicine, Johns Hopkins University School of Medicine, delivered the annual Walter L. Niles Memorial Lecture, February 20. His subject was "Wartime Medical Research." The lecture is sponsored by Tau Chapter of Nu Sigma Nu.

*University of Pittsburgh
School of Medicine*

Dr. Andrew Wallhauser has resigned as assistant professor of pathology and parasitology. He is succeeded by Dr. Elwyn L. Heller.

The department of surgery has received an anonymous contribution of \$20,000, to be used for teaching and research in the department.

*University of Maryland
School of Medicine*

Drastic changes in the University of Maryland curriculum, under which all students will be required to take courses in American history, American literature and American government and its philosophy, will go into effect next school year. Medical, engineering and law students, as well as those in the liberal arts colleges, will be required to take the courses, that the university may "turn out men and women graduates with a better understanding of the American way of life."

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*Wayne University
College of Medicine*

Dr. Gordon H. Scott, formerly head of the department of anatomy, University of Southern California School of Medicine, has assumed his duties as professor and head of the department of anatomy.

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*Loyola University
School of Medicine*

Dr. Rafael Mendez, formerly instructor in pharmacotherapy, Harvard Medical School, Boston, has been promoted to associate professor and appointed acting chairman of the department of pharmacology.

*Ohio State University
College of Medicine*

Dr. George H. Ruggy, assistant professor of physiologic chemistry and pharmacology, has been appointed to the new position of junior dean. Dr. Bruce K. Wiseman has been appointed chairman of the department of medicine, succeeding Dr. Charles A. Doan, who was recently named dean of the medical school.

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*Washington University
School of Medicine*

Dr. Alfred Blalock, professor of surgery, Johns Hopkins University School of Medicine, delivered the tenth annual Leo Loeb Lecture February 13 under the auspices of Mu Chapter of Phi Beta Pi Fraternity. His subject was "Traumatic Shock."

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Tufts College Medical School

Dr. John G. Downing has been appointed professor of dermatology and syphilology.

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*Tulane University of Louisiana
School of Medicine*

Dr. Henry Laurens has resigned his professorship in physiology.

General News

Dental Education and Research in Columbia University

Plans for the strengthening of dental education, research and practice by an integration of the Faculty of Dentistry with the Faculty of Medicine of Columbia University has been announced by President Nicholas Murray Butler. The decision of the Trustees of the University represents the final step in the integration of dental education and research with the medical program at the Columbia-Presbyterian Medical Center which was visualized when the Dental School was made a part of the Center in 1928.

Dentistry is now one of the most important professions in the health program of the country. It has made noteworthy contributions to individual health and comfort. It has become increasingly necessary in broad programs of community health. During its hundred years of existence, the dental profession has made steady progress in developing high standards of skill and public service. Its requirements for training and licensure are closely parallel to those of medicine. Many of the advances in the biological, chemical and physical sciences are as applicable to research and teaching in dentistry as they are in medicine. The sciences of anatomy, bacteriology, pathology, pharmacology, physiology, endocrinology and nutrition are as much dental as they are medical subjects. The close relationships of clinical dentistry and medicine are common knowledge. That these two major health professions should be closely coordinated is most appropriate.

The decision of the Trustees of the University aims to insure the active interest and support for dental education and research of the strong staff of physicians, surgeons, scientists, nurses and public health leaders who comprise the Faculty of Medicine at the Medical Center and aims to emphasize the im-

portance of dentistry itself. This group can contribute immeasurably to the development of a stronger program of dental education in the university. At the same time, the efforts in medical training and nursing education, public health instruction and graduate medical training will be benefited by the active participation of dentistry in these closely related fields of professional activity. There appear to be real advantages and particularly promising opportunities in the integration of the work in dental and oral surgery with the work of the other departments and schools at the Medical Center, such as have already developed in public health, tropical medicine, graduate and postgraduate medical education, nursing, cancer research, physical medicine and other major activities, all of which can also contribute to the strengthening of dental teaching and research.

The new plan at Columbia University is designed to integrate the training for the two professions of dentistry and medicine as completely as possible without handicapping the development of either in its respective field of education, research and practice. It is obvious that certain features of dental practice are distinctive and should be continued independently but many elements of training can advantageously be combined under a single educational policy and faculty.

The Columbia program recognizes the great importance of continuing the independence of dental practice and the preparation of dentists in courses of instruction developed for their own particular needs. To accomplish this the staff of clinical instructors will continue to be fully qualified dental teachers who will occupy positions in the University, Medical Faculty and Teaching Staff entirely comparable to their colleagues in medicine or public health. Students will be selected for admission to the

dental profession independently of those applying for medical training and the present high standards of admission will be preserved. The entire curriculum of four years of dental studies will be under the guidance of a Committee on Dental Education of whom a majority shall be from the dental group. This committee will make recommendations on the qualifications and admission requirements for dental students, the curriculum of instruction, the candidates for the degree of Doctor of Dental Surgery and shall be responsible for directing the educational program in dentistry. Certain members of the Department of Dental and Oral Surgery will have seats on the Faculty of Medicine and a dentist will be appointed Associate Dean for Dental and Oral Surgery and Executive Officer of this University Department of Instruction.

The medical and surgical staffs of the hospitals at the Medical Center recognize fully the need of better dental services for ward and clinic patients, many of whom suffer from a combination of dental and medical conditions. Closer coordination of medical and dental care for these patients is important and can be accomplished much more readily through unified action and direction.

The rapid developments of graduate and postgraduate medical education during recent years are paralleled by similar programs in dentistry but these independent plans should be closely related in hospitals, clinics and laboratories. The demands for graduate and postgraduate training for ex-service medical and dental officers in the near future will be urgent. The program of Columbia University in the various graduate fields of medicine and dentistry will make important contributions in the postwar period of adjustment for ex-service physicians and dentists. It can best be carried through under a single coordinating faculty.

Schering Awards to Medical Students

Announcement of winners in the Schering award competition, open to un-

dergraduate medical students in the United States and Canada, has been made by the committee of judges. Choosing from a large number of manuscripts on the subject "Hormones and Cancer," the committee has made the following awards:

First Prize, \$500, Maurice L. Silver, class of 1945, Loyola University School of Medicine, Chicago.

Second Prize, \$300, Sidney L. Kafka, class of February 1945, Middlesex University School of Medicine, Waltham, Mass.

Third Prize, tie, duplicate awards of \$200 each to Roslyn Wiener, class of 1945, University of Michigan Medical School, Ann Arbor, and Norman B. Hirt, class of 1945, Queen's University Faculty of Medicine, Kingston, Ont.

The Schering award competition has been offered annually by the Schering Corporation for the purpose of stimulating a current interest in endocrinology among undergraduate medical students.

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Advisory Council on Hematology Research

A medical advisory council has been appointed for the Hematology Research Foundation to assist in the allocation of its funds and related medical problems. Members of the council include:

Dr. Raphael Isaacs, director of the hematology department, Michael Reese Hospital; Dr. Louis R. Limarzi, assistant professor of medicine, University of Illinois College of Medicine; Dr. Andrew C. Ivy, Nathan Smith Davis professor of physiology and pharmacology and head of the department, Northwestern University Medical School; Dr. Ludvig Hektoen, emeritus professor of pathology (Rush) University of Chicago School of Medicine; Dr. Anton J. Carlson, professor emeritus of physiology, University of Chicago School of Medicine; Dr. Italo F. Volini, dean of Loyola University School of Medicine; Dr. Otto Saphir, pathologist of Michael Reese Hospital.

The objective of the Hematology Research Foundation, which was organized

in 1944, is to seek a cure or successful treatment for pernicious anemia, Hodgkin's disease, leukemia and other blood disorders through scientific research. Officers of the foundation include Mrs. Phillip Marcus, president; Mrs. Joseph Reader, treasurer, and Mrs. Jack Hornstein, executive secretary.

Advisory Council on Medical Education

At a meeting of this Council held in Chicago, February 11th, Dr. E. M. MacEwen, dean of the College of Medicine, State University of Iowa, and chairman of the Executive Council of the Association of American Medical Colleges, was elected president. Dr. Maurice H. Rees, dean University of Colorado School of Medicine, was re-elected vice president; Dr. R. C. Buerki, dean of the Graduate School of Medicine, University of Pennsylvania, was re-elected secretary-treasurer.

University of Washington Medical School

The present legislature has been asked to appropriate \$450,000 to maintain the proposed school of medicine and dentistry at the University of Washington, Seattle. This sum, it is expected, would maintain the school for two years. At ensuing sessions of the legislature it is hoped to obtain additional appropriations of \$3,700,000 for maintenance and improvement. The Washington State Medical Association is sponsoring this project, which would consist of a standard four year course of instruction in medicine and dentistry. The present buildings, laboratory, library and other facilities of the university will allow the accommodation of 50 students in medicine and 50 in dentistry in the school year of 1946 if funds, largely for faculty salaries, are made available now.

NROTC Program of the Navy

The transition from the emergency V-12 Program to an expanded NROTC will be achieved by the orderly transfer of specified groups of V-12 students into the NROTC on March 1 and July 1,

1945. All men now under instruction in the V-12 Program will remain under training as officer candidates so long as they continue to meet requirements. The plan does not include the enforced separation from officer candidacy of any V-12 student for reasons other than those which have led to separation in the past, i.e., academic failure, breach of naval discipline, lack of physical qualifications, or lack of officer-like qualities.

V-12 premedical and medical students will not be included in this transfer. There will be no new input of students into the V-12 program on March 1, 1945, except those entitled to transfer from flight training under existing directives.

Army Medical Research Board

A Medical Research Board has been set up in the Office of the Surgeon General to coordinate all Medical Department research with other staff agencies and components of the Army as well as with agencies outside the Army.

Major General George F. Lull, USA, Deputy Surgeon General, is President, Colonel Thomas B. Turner, MC, Assistant Director, Preventive Medicine Service, is special Assistant to the President and Lieutenant Colonel Leon H. Warren, MC, Chief, Research Coordination Branch, Technical Division, Operations Service, is recorder.

The Executive Committee for the Board includes Brigadier General James S. Simmons, USA, Chief, Preventive Medicine Service, Brigadier General Stanhope Bayne-Jones, USA, Deputy Chief, Preventive Medicine Service, Brigadier General James A. Kelsner, USA, Director, Veterinary Division, Brigadier General Rex McKinley McDowell, USA, Deputy Director, Dental Division, Colonel Howard F. Currie, MC, Executive Officer, Supply Service, Lieutenant Colonel Roy H. Turner, MC, Chief, Communicable Disease Treatment Branch, Medical Division, Lieutenant Colonel John B. Klopp, MC, Director, Technical Division, Operations Service, and Lieutenant Colonel Michael E. DeBailey, MC, Chief, General Surgery Branch, Surgical Division.

Book News

Internal Medicine: Its Theory and Practice

Edited by John H. Musser, M.D., Professor of Medicine in the Tulane University of Louisiana School of Medicine. Ed. 4. Lea & Febiger, Philadelphia. 1945. Price, \$10.

One of the objectives aimed at by the contributors to this book was to give the undergraduate student a text written by well qualified men who would present the essentials without allowing the book to become encyclopedic in size and impractical for study and handling. In this the authors have succeeded well. Nineteen of the twenty-six chapters were written by heads of medical school departments; the remaining seven, by men who are heads of special divisions in departments of medicine. All are teachers of wide experience and authorities in their respective fields of activity. Therefore, it is a book for the student. It was written for him.

The abundance of new material which has been added to this work has required nearly 100 more pages than the previous edition, in spite of the deletions made in many sections. These numerous changes and additions deal for the most part with the newer therapies; the sulfonamides, penicillin, thiouracil and many others. A certain amount of space has been devoted to the problems of war medicine, notably in conjunction with the protozoan and metazoan diseases and the acute infectious diseases. Military neuropsychiatric disabilities, war neurology and altitude sickness all receive due attention.

Modern Methods of Amputation

By Edmundo Vasconcelos, Professor, University of Sao Paulo: With an Introductory Survey of the Development of Amputation by Major General Norman T.O. Kirk, Surgeon General, U. S. Army. The Philosophical Library, New York. 1945. Price, \$10.

This work will be hailed as being the finest contribution to our knowledge of amputations. It is based on the author's personal experiences, study and observation as well as reading. The illustrations are the work of a skilled artist who apparently understood well what should be illustrated. They make it possible to perform any amputation illustrated by following what is depicted. Anatomically, they are correct to the finest detail. Adding much to the beauty of these illustrations is the fact that they are printed on a rough finished paper. The text is also good. The first and second chapters deal

with general considerations, including discussions of optimal levels of amputation and technique. The third chapter discusses indications. The fourth and fifth chapters describe individual amputations. It is these two chapters which contain the beautiful illustrations, several hundred of them. The final chapter is a practical and well illustrated description of the various prostheses suitable for different types of amputations.

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Essentials of Allergy

By Leo H. Crisp, M.D., Assistant Professor of Medicine and Lecturer in Immunology, University of Pittsburgh School of Medicine. With a Foreword by Dr. Robert A. Cooke, M.D., Chairman, Committee on Education, American Academy of Allergy. J. B. Lippincott Company, Philadelphia. 1945. Price, \$5.

A complete exposition of the fundamentals of allergy, diagnosis and treatment of all allergic states. It should have value as a manual for the undergraduate medical student. Part I deals with the basic immunologic principles of anaphylaxis and allergy. The application of these principles to clinical allergy is covered in Part II. Case records are appended to each chapter to illustrate practical considerations.

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Approved Laboratory Technic

By John A. Kolmer, M.D., Professor of Medicine, Temple University School of Medicine, and Fred Boerner, V.M.D., Associate Professor of Clinical Bacteriology, Graduate School of Medicine, University of Pennsylvania. Ed. 4. D. Appleton-Century Company, New York. 1945. Price, \$10.

Covering the fields of clinical pathology, bacteriology, mycology, virology, parasitology, serology, biochemistry and histology. It also includes sections on the collection of specimens; the prevention and emergency treatment of laboratory accidents; the care, feeding, inoculation, bleeding and autopsying of laboratory animals; methods for preparing standard solutions and methods for determining the presence of poisons. This is a complete revision, largely rewritten, considerably enlarged. It includes a large amount of new material and many new illustrations. Everything that has to do with a laboratory is discussed.

Anatomy: As a Basis for Medical and Dental Practice

By Donald Mainland, M.B., D.Sc., F.R.S.C., Professor of Anatomy, Dalhousie University, Halifax, Canada. Paul B. Hoeber, Inc., Medical Book Department of Harper & Brothers, New York. 1945. Price, \$7.50.

This is an anatomy that is "different" from all other textbooks on the subject. It is at once apparent that the author approached his task from the standpoint of anatomy as related to the practice of medicine; that he is an experienced teacher as well as an accomplished anatomist; that he has given his assignment a great deal of thought and that he is thoroughly familiar with the whole subject. A cursory glance at the bibliography is evidence of that fact. The size of the book is not that of the traditional anatomy text. There are very few illustrations; only 57, which, again, is "different" from older texts. It stresses that the student should not rely solely on a text, especially in anatomy. He is thereby forced to consult an atlas. From the standpoint of teaching, this would appear to be the ideal text in anatomy for the undergraduate medical student.

In line with the aim of the Medical Students Series, it is briefer than most texts in the field. But Dr. Mainland does not feel that brevity is an *emergency measure*; rather, that in the past, anatomy courses were loaded with memory exercises and multitudinous facts which could beneficially be omitted. Never sacrificing clinical aspects, however, this text is stripped of non-essentials and includes all those facts of importance in actual practice.

The first of the three main sections deals with aims and methods of study, formulating rules and suggestions for observation and exploration. The second section, on general anatomy, discusses normal variation, development, and the structural and functional principles of organs. The main portion of the book, on regional anatomy, is so presented that the student refers continuously to living people. Clinical topics such as the anatomico-physiological aspects of hernia and appendicitis, are given in detail. Individual organs are not demonstrated as isolated parts; instead a region is built up from the vertebral column to the body surface.

Appendices contain normal organ weight tables, pelvic dimensions, and dates of ossification and tooth eruption. One appendix offers suggestions for study, review, consultation of literature, and preparation of articles. The book can accompany any good anatomical atlas and is not tied to a particular dissection routine. A modern and different approach, Dr. Mainland's text will prove readily adaptable to the sequence and length of every course, as well as for individual use of the graduate or practitioner.

Duodenal and Jejunal Peptic Ulcer: Technic of Resection

By Rudolf Nissen, M.D., Acting Surgeon, Jewish Hospital, Brooklyn. Foreword by Owen H. Wangenstein, M.D., Professor of Surgery, University of Minnesota. Grune & Stratton, New York. 1945. Price, \$4.75.

This book deals with certain technical procedures illustrated by a series of drawings. The text is limited to an explanation of the rationale of the procedures and amplifications of the legends of the pictures,—123 original drawings of fine workmanship. Surgeons will appreciate this book.

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Clinical Case Taking: Guides for the Study of Patients

By George R. Herrmann, M.D., Professor of Medicine, University of Texas School of Medicine. Ed. 3. The C. V. Mosby Company, St. Louis. 1945. Price, \$1.75.

A manual of procedure for actual ward and bedside practice, presenting an adequate technique in history taking and physical examination and the absolute minimum of points to be commented on in every type of case as to history, physical examination and laboratory study. It contains sections on the philosophy of clinical medicine; the plan and scope of clinical case taking; the objectives; the teaching value; the principles and practice; the art, technique and writing up of the record. The author's long experience as a teacher is reflected in this book. Every medical student, even the practitioner, will do well to have a copy of this book handy.

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Manual of Clinical Mycology

By Norman F. Comant, Ph.D.; Donald S. Martin, M.D.; David T. Smith, M.D.; Roger D. Baker, M.D.; Jasper L. Callaway, M.D. Prepared under the auspices of the Division of Medical Sciences of the National Research Council. W. B. Saunders Company, Philadelphia. 1944. Price, \$3.50.

This is a *must* book for every medical student and practitioner. It gives complete, succinct information on all fungus diseases of which we will, no doubt, see many cases because of the war rampant in countries where they are, one can say, epidemic all the time. The manual is dedicated to the memory of Archie S. Woods, late vice president and treasurer of the John and Mary R. Markle Foundation, for his constant personal interest in research in fungus diseases.

An Introduction to Animal Biology

By John B. Parker, Ph.D., Professor Emeritus, and John J. Clarke, Ph.D., Assistant Professor of Biology, The Catholic University of America. Ed. 2. The C. V. Mosby Company, St. Louis. 1945. Price, \$3.75.

Designed to teach the student; to make the study of the science of biology a means to an end not merely a science. It is desirable that every student who intends to study medicine later spend the required year in biology as outlined in this book. It is biology; not something that will take the place of biology.

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The March of Medicine

New York Academy of Medicine Lectures to the Laity. 1944. Columbia University Press, New York. 1945. Price, \$1.75.

This is the ninth series of lectures. This book reflects the impact of war and rapid and violent social change on medical science. There were six lectures: (1) Morale and Propaganda; (2) Food and Civilization; (3)

Chemotherapy; (4) Medicine and the Changing World; (5) Effects of Science on Human Beings; (6) Wars and Epidemics. It is a good book for lay and professional readers.

* *

Laboratory Manual for Elementary Physiology

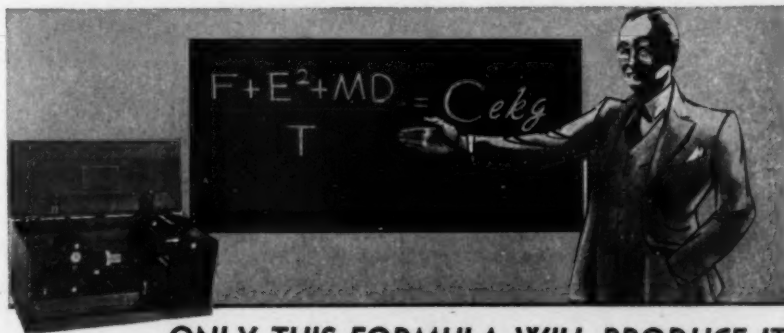
By Lalia V. Walling, Assistant Professor, and Kenneth Siler, formerly Instructor in Physiology, University of Kansas. Ed. 4. The C. V. Mosby Company, St. Louis, Missouri. 1945. Price, \$1.50.

A very handy, loose leaf book for the use of students in physiology.

* *

The Reticulo-Endothelial System in Sulfonamide Activity

By Frank Thomas Maher, Ph.D., Assistant Professor of Pharmacognosy and Pharmacology, College of Medicine, University of Illinois. The University of Illinois Press, Urbana. 1944. Price, \$2.50.

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The Pathology of Internal Diseases

By William Boyd, M.D., Professor of Pathology and Bacteriology, University of Toronto. Ed. 4. Lea & Febiger, Philadelphia. 1944. Price, \$10.

This work reflects the new knowledge concerning the underlying pathological changes in many diseases, particularly those of the cardiovascular system. Many new sections have been added, while others have been rewritten. Among these sections are those dealing with the etiology of rheumatic fever, calcareous aortic stenosis, the time factor in coronary infarcts, the arterial lesions of hypertension, diffuse arteriolar sclerosis, healed infarcts of the lung, the geography of primary carcinoma of the liver, pyelonephritis, intracranial aneurisms, and the pathogenesis of poliomyelitis. Twenty-two new figures and four new colored plates have also been added.

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**The Story of a Hospital:
The Neurological Institute of
New York, 1909-1938**

By Charles A. Elsberg, M.D., Chief of Surgical Service (Emeritus), Neurological Institute. Paul B. Hoeber, Inc., Medical Book Department of Harper & Brothers, New York. 1944. Price, \$3.50.

Microbiology and Pathology

By Charles F. Carter, M.D., Instructor in Microbiology and Pathology, Parkland Hospital School of Nursing, Dallas, Texas. Ed. 3. The C. V. Mosby Company, St. Louis. 1944. Price, \$3.50.

For nurses.

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Clinical Heart Disease

By Samuel A. Levine, M.D., Assistant Professor of Medicine, Harvard Medical School. Ed. 3. W. B. Saunders Company, Philadelphia. 1945. Price, \$6.

For him whose interest is in this field, this is an excellent book. It is complete, well written, not verbose yet not too concise. The illustrations really illustrate and they are well made. Too often electrocardiograms are reproduced in texts as mere blurs which take up valuable space and do not illustrate anything.

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**Medicolegal Blood Group Determination:
Theory, Technique, Practice**

By David Harley, M.D., St. Mary's Hospital, London, England. Ed. 2. Grune & Stratton, New York. 1944. Price, \$3.50.

A multum in parvo. The subject is well and thoroughly covered by an expert.

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THE PATHOLOGY OF INTERNAL DISEASES

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Professor of Pathology and Bacteriology in the University of Toronto, Toronto

Octavo, 857 pages, illustrated with 366 engravings and 8 colored plates. Cloth, \$10.00.

This work presents in a single volume the relations of anatomy, histology and physiology to the problems which confront every general practitioner. It describes the causes and nature of internal diseases and traces their progress. This new fourth edition reflects the new knowledge concerning the underlying pathological changes in many diseases, particularly those of the cardiovascular system.

Many new sections have been added and many others have been entirely rewritten. Twenty-two new figures and four new colored plates have also been added. Among the new sections are those dealing with the etiology of rheumatic fever, calcareous aortic stenosis, the time factor in coronary infarcts, the arterial lesions of hypertension and diffuse arteriolar sclerosis.

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